Transport Canada Transports Canada

TP 1624

Marine Casualty Investigations

Enquêtes sur les accidents maritimes

Investigation Report to the Minister pursuant to sections 477 or 480 of the Canada Shipping Act (1985)

Rapport d'investigation au Ministre conformément aux articles 477 ou 480 de la Loi sur la marine marchande du Canada (1985)

Canada

Ce rapport est aussi disponible en français.

REPORT OF INVESTIGATION INTO THE CIRCUMSTANCES ATTENDING THE COLLISION BETWEEN THE PANAMANIAN VESSEL "OCEAN FAME" AND THE SOVIET VESSEL "IRTYSHSK", 20 MILES SOUTH-WEST OF CAPE BEALE, BRITISH COLUMBIA, AUGUST 24, 1988.

REPORT No. 531

These sections of the Investigation Report prepared pursuant to Section 477, or of the Preliminary Inquiry Report prepared pursuant to Section 480, of the Canada Shipping Act, (1985) are released for accident prevention purposes only and are confined to cause-related circumstances.

This report and its contents may be deficient and misleading if used in any other process and are not to be used or admitted in evidence in any legal proceedings, either civil or criminal, arising out of the casualty described in the report. The statements, opinions and findings in the report are those of the Marine Casualty Investigations Division only and do not constitute admissions made by or on behalf of Her Majesty the Queen in right of Canada.

Ces sections du rapport d'investigation ou du rapport préliminaire sont rédigées en vertu des articles 477 et 480 respectifs de la Loi sur la marine marchande du Canada (1985) et ne sont publiées qu'à des fins de prévention des accidents seulement et ne portent que sur les circonstances entourant le cas à l'étude.

Ce rapport et son contenu peuvent être insuffisants et trompeurs s'ils sont utilisés à d'autres fins et ne peuvent être utilisés ou acceptés comme preuve dans quelque procédure que ce soit, au civil ou au criminel, même si ces procédures découlent de l'accident décrit dans ledit rapport. Les déclarations, les opinions et les constatations de ce rapport appartiennent uniquement à la section des Enquêtes sur les accidents maritimes et ne constituent pas une acceptation de la part ou au nom de Sa Majesté du chef du Canada.

REPORT OF INVESTIGATION INTO THE CIRCUMSTANCES ATTENDING THE COLLISION BETWEEN THE PANAMANIAN VESSEL "OCEAN FAME" AND THE SOVIET VESSEL "IRTYSHSK", 20 MILES SOUTH-WEST OF CAPE BEALE, BRITISH COLUMBIA, AUGUST 24, 1988.

Particulars of Vessels

Name	"OCEAN FAME"	"IRTYSHSK"
Official No.	14427-84	M-42151
Foreign Fishing Licence Number		FP 03290
Port of Registry	Panama	Petropavlovsk, Kamchatsky
Call Sign	3EDU3	UGPC
Gross Tonnage Net Tonnage	14,187 9,390	4,407 1,322
Length (Overall)	160.38 m	103.13 m
Breadth (Moulded)	24.60 m	16.01 m
Depth (Moulded)	13.62 m	10.24 m
Draught (Time of Collision)	9.05 m Fwd 10.08 m Aft	5.31 m Fwd 6.41 m Aft
Type	Bulk Carrier	Stern Trawler, Fish Factory
Built	1981, Imbari Zosen Imbari, Japan	1985, U.S.S.R.
Propulsion	Hitachi Zosen, B & W, diesel 2SA, 7 cyl., 550 x 1380, 9560 BHP, driving a single fixed pitch propeller	(2) 6 CHN 40/46 Russian diesels, 2 x 3500 BHP, driving a single variable pitch propeller, single rudder and Kort nozzle
Cargo	19,999 tonnes grain	388 tonnes frozen fish; 11.5 tonnes fish meal.
Crew	18	91
Passengers	Nil	1

Classification	N.K.K	Register of Shipping of the USSR (R.S.)
Owners	Las Perlas Shipping Co. S.A., Panama	Kamchatrybrom c/o Petropavlovsk Fishing Co., Petropavlovsk, Kamchatsky, USSR
Agents (Can)	Empire Shipping Co. Ltd. 1780-505 Burrard St., Vancouver, B.C., V7X 1C6	Maritime Group 1102-100 Kapilano, West Vancouver, B.C. V7T 1A2

Navigation Equipment- "OCEAN FAME"

Radar (2)	JRC, JMA-157B, 3.2 cm (x band) 96 mile range
Direction Finder	JRC, JLR-1003C
Echo Sounder	JRC, NJA-193S
Loran-C	JRC, JNA-710
VHF (2)	JRC, NCE-2211
Gyro Compass	Hokushin, KM 008-2
Autopilot	Hokushin
Course Recorder	Hokushin, Model GT
Magnetic Compass	Nunotani Keiki
Weather Facsimile	JRC, JAX-29
Main Transmitter	JRC, NSD-1589
Main Receiver	JRC, NRD-77

Life-saving Equipment

Lifeboats (2)	Fibreglass, 27 person, one motorized
Liferafts (2)	Fujikura, 25 person, inflatable, type 913
	Fujikura, 6 person, inflatable, type 913

Description of Vessel

The "OCEAN FAME" is a single screw motor-driven bulk carrier of welded steel construction with a raised forecastle and a bulbous bow. The crew accommodation, bridge and engine-room are located aft and there are four cargo holds forward with McGregor steel hatch covers. The holds are serviced by four jib cranes.

The navigation bridge has open wings and the distance from bridge to bow is 131 m and from bridge to stern 29 m., i.e., from frame No.33.

The steering position is located at the centre of the wheel-house and the two radar sets are in an athwartships line, close to starboard of this position.

The engines may be manoeuvred either on bridge control or engine-room control using the same electric telegraph control for either mode. The telegraph and rpm gauge are located on the control console to port of the steering position. Rudder angle and engine revolution indicators are located in the wheel-house above the amidships window and the automatic whistle controller and the VHF radiotelephones are mounted on the bulkhead below the amidships windows.

There are gyro repeaters on each bridge wing and one on the amidships window ledge.

The "OCEAN FAME" had a maximum trial speed of 16.687 knots. Her designed service speed is 14.1 knots at 145 rpm in the loaded condition and she was being operated at a service speed of 13.5 knots at 130 rpm. Harbour manoeuvring speeds are as follows:

Full Ahead	100 rpm	10.3 knots
Half Ahead	86 rpm	8.9 knots
Slow Ahead	65 rpm	6.7 knots
D.S. Ahead	50 rpm	5.1 knots

(Astern revs. are the same as those for ahead)

The vessel has a chart room area recessed at the after starboard side of the wheel-house; the area is partitioned off at night by sliding screens.

Navigation Equipment- "IRTYSHSK"

Radar	(2)	U.S.S.R., Ocean M (x band) 3 cm, range 1-64 mi. U.S.S.R., Ocean M (s band) 10 cm,range 1-64 mi.

Direction Finder	U.S.S.R.
Echo Sounder (2)	Koden (Colour) CVS-8805 Skol- 1500
Sonar (3)	Sargan-3 U.S.S.R.- RRIBOJ 4-2 U.S.S.R.- RRIBOJ 4-1
Decca	U.S.S.R.- Pierce
Loran-A & C	U.S.S.R.- KPI-5
Satellite	
Navigator (2)	Furuno,- FSN-70 U.S.S.R.-Schooner
VHF Radio- (3) telephone	U.S.S.R.-Cejner 19, P, 22 cm S.M.R. - Striker-550 U.S.S.R. REJD-1
Gyro Compass	U.S.S.R.
Autopilot	U.S.S.R.
Course Recorder	U.S.S.R. KYRS-4
Magnetic Compass	U.S.S.R.

Life-saving Equipment

Lifeboats (2)	Fibreglass, 55 person, motorized
Workboat	Fibreglass, motorized
Liferafts (10)	U.S.S.R., ea. 10 person

Description of Vessel

The "IRTYSHSK" is a single screw, motor-driven factory stern trawler of welded steel construction with a raked stem and cruiser stern. The navigation bridge is located approximately one-third of the vessel's length from forward, the engine-room is immediately aft of amidships having a shaft tunnel, and the crew accommodation is amidships extending forward along the main deck accommodation alleyway.

The vessel has a fish processing factory space on the enclosed main deck aft and two refrigerated cargo holds,

freezer compartments and chill rooms in which to stow the processed fish.

The forecastle head is located at upper deck level which is the uppermost continuous weather deck and steps down from the foredeck. The vessel is ice strengthened forward; frame spacing is 600 mm, with intermediate ice frames in the forepeak tank at 300 mm spacing.

The navigation bridge has open wings and the distance from bridge to bow is approximately 35 m and from bridge to stern 70 m. The wheel-house is fitted with a control console running athwartships near the forward windows and the steering wheel is located amidships on the console.

The "IRTYSHSK" is equipped with direct propulsion controls, supported by an electric telegraph, both of which are located on the console to starboard of the steering wheel. The main engines and shaft are unidirectional and ahead and astern thrusts are obtained by blade pitch adjustment, taking approximately 10 seconds from 'full ahead' to 'full astern' pitch. Gauges for engine load, graduated from 0% to 100%, one for each engine, are located above the console. Engine load is kept to a maximum of approximately 80% as the electrical plant also services the fish plant etc. The vessel has a full load service speed of 16 knots at 145 rpm, with a pitch control handle setting of '8'. Pitch control settings for the vessels in the loaded condition are as follows:

Setting	Speed (knots)
8	16.0
6	13.5
4	10.0
3	8.0
2	6.0
1	3.5

'Full Astern' is approximately setting No.4

The radar sets are located one at each side of the wheel-house; gyro repeaters are located on each bridge wing.

The "IRTYSHSK" has a separate chart room area aft of the wheel-house with windows along the after bulkhead and a complete set of steering and propulsion controls for use when trawling, etc.

Notes: 1. All times in this report are expressed in Pacific Daylight Saving Time (UTC minus 7 hours).

2. All references to the Canada Shipping Act refer to Chapter S-9-1985 of the Revised Statutes of Canada.

Background

On the early morning of August 24, 1988, the Panamanian bulk carrier M.V. "OCEAN FAME" was in collision with the Russian stern trawler/factory vessel "IRTYSHSK" in thick fog, in a position 20 miles south-west of Cape Beale, off the west coast of Vancouver Island, B.C.

The "OCEAN FAME" was fully laden with a cargo of barley from Vancouver, B.C. and was westbound for Japan with a crew of 18 on board. The "IRTYSHSK", with a full complement of 92 was steaming in a NE'ly direction to rendezvous with Canadian fishing vessels with which she was to engage in joint venture fishing.

After initial delays for damage assessments, both vessels returned to Canadian ports under their own power for repairs.

As a result of the collision, the "OCEAN FAME" sustained extensive damage to her shell plating at No.1 cargo hold, with a large 'V' shaped gash extending below the water line. Repairs to the vessel amounted to some $650,000 (Can.) and loss of cargo amounted to some $1 million (Can.).

The "IRTYSHSK" sustained extensive damage to her bow, resulting in a lengthy stay in port, with repairs costing some $800,000 (Can.).

There were no injuries and only very minor pollution as a result of this casualty.

Narrative

Account of Events as reported by the "OCEAN FAME"

The Panamanian M.V. "OCEAN FAME" departed from Japan, August 8, 1988 with a Korean crew of 18 on board including the master. The vessel was in a ballasted condition, bound for Vancouver, B.C. to load a cargo of grain. She secured at Pioneer Grain Elevator, Vancouver, at 2030, August 21 and commenced loading at 0830, August 22.

The "OCEAN FAME" completed loading at 1605, August 23 and her pilot boarded at 1635. She departed Pioneer Grain Elevator at 1700 with a cargo of 19,999 tonnes of barley bound for Nagoya, Japan. Prior to departure, all bridge and steering gear was tested and found satisfactory.

At 2340, August 23, her pilot disembarked at the pilot station off Victoria and she continued on her voyage.

The weather at this time was described as being cloudy, fine and clear, with a gentle SW'ly breeze and a slight sea.

The master remained in the wheel-house until 0030, August 24, at which time he passed the conduct of the vessel to the second officer. Although he kept a night order book, on this occasion the master relayed his orders verbally to the second officer before proceeding to his quarters. The night orders included instructions to follow the Traffic Separation Zone and courses as laid off on U.S. Chart No. 18480. Also included were instructions to maintain a sharp lookout for fishing vessels and to participate in the Vessel Traffic Services (VTS) Reporting System, monitoring VHF channels 74 and 16 when in the Tofino VTS zone: standing orders were to be obeyed at all times.

The navigating officers of the "OCEAN FAME" stood a 4 on, 8 off watchkeeping system. The second officer stood the 0000-0400 watch, the chief officer, the 0400-0800 watch and the third officer, the 0800-1200 watch.

The passage through Juan de Fuca Strait was uneventful and the first mate arrived in the wheel-house at 0345 assuming conduct of the vessel at 0400, allowing the second officer to proceed below. Also, at 0400 the quartermasters relieved the watch at the wheel and the second engineer and his oiler assumed the engine-room 0400-0800 watch.

At 0400 the "OCEAN FAME" was in a position with Juan de Fuca traffic lane separation light buoy 'J' (LL No.180.8), bearing 202°T&G, distance 9 cables and the vessel's course was altered from 292°T&G to 275°T&G thence to 270°T&G some minutes later. She was proceeding at her full service speed of 13.5 knots at 130 rpm and as was the practice on board while coasting, the engines were on engine-room control. Navigation was by radar and positions were being plotted on U.S. Chart No. 18480. Both radars were switched on, the port set being on stand-by and the starboard set in operation. The vessel was being steered in the hand-electric mode by a quartermaster at the wheel.

The weather at 0400 was described as being cloudy fine and clear with a fresh SW'ly breeze.

At 0401 the "OCEAN FAME" reported her position, course and speed to Tofino VTS on VHF channel 74, the appropriate assigned VTS frequency for the area. VTS advised the "OCEAN FAME" that numerous fishing vessels were in the area and that there was

thick fog ahead, but the presence of large foreign fish factory vessels within the fleet was not indicated.

By 0500, the wind had backed to south-easterly, force 4 and the visibility deteriorated. The chief officer advised the engine-room by telephone that fog was setting in and ordered the engines reduced to 120 rpm, giving a speed of approximately 11.5 knots and the automatic fog signal was switched on.

During the first part of the 0400-0800 watch the vessel encountered numerous fishing vessels necessitating small course alterations and she overtook the Panamanian freighter "GOLDEN ENTERPRISE" which was also westbound and had been crossing ahead of the "OCEAN FAME". The passing required a course alteration to 280°T&G from about 0442 to 0508, causing the "OCEAN FAME" to be somewhat north of her intended track when clear of the Separation Zone at Swiftsure Bank. Tofino VTS liaised on VHF radiotelephone with the "OCEAN FAME" and the "GOLDEN ENTERPRISE" in arranging a safe passing in deteriorating visibility; as the "GOLDEN ENTERPRISE" was not equipped with channel 74 VHF.

At 0530, while proceeding on a course of 275°T&G, dense fog set in and the vessel's speed was further reduced to 'manoeuvring, full ahead', 10 knots at 100 rpm. In the wheel-house at this time were the chief officer and the quartermaster: no lookout was posted. In the engine-room, the second engineer stood by the engine controls in the control room while the oiler attended to duties in the main engine-room.

At 0534, the "OCEAN FAME" called Tofino VTS and advised that her course was 275°T&G and her speed 13 knots; Tofino VTS again cautioned her on the numerous fishing vessels in the area ahead of her. This statement, and after the fact calculations indicate that the vessel's intended reduction in speed had not fully taken effect at this time.

The radar was on a relative motion display, stabilized, north-up presentation and as the vessel proceeded, the chief officer plotted echoes on the radar reflection plotter using a grease pencil, giving him a relative plot of approaching traffic; he did not keep a record of bearings, distances or times of his plots.

Just prior to 0600 he plotted four targets on his screen, two to starboard and two to port of his course line. Plots were frequent, about every minute, and he determined that three of the four targets posed no problem. The fourth target, which he first plotted at 9 miles bearing between one to two points on the port bow, was on a constant bearing. The "OCEAN FAME" was

reportedly steaming at 10 to 11 knots at this time.

At 0600, the target was reportedly bearing 255°T, distance 6 miles and the "OCEAN FAME" continued on her course of 275°T&G, at approximately 10 knots.

At 06.27.36 (time as recorded by the VTS station), with the target on a constant bearing at approximately 1 mile distance, the chief officer ordered 20° starboard helm to bring the "OCEAN FAME" to a heading of 320°T&G and called the eastbound vessel on VHF channel 74 informing of his actions; however, there was no response to his broadcast.

At 06.28.16, the "OCEAN FAME" made a second attempt to call the eastbound vessel which was now about 5 cables off and again, received no reply. At this time the chief officer could hear the approaching vessel blow one long blast on her whistle off his port bow: both wheel-house doors were open.

At 0630, just as the "OCEAN FAME" steadied on a course of 320°T&G, a vessel, later identified as the Russian vessel "IRTYSHSK", struck the port side of the "OCEAN FAME" abeam of No.1 cargo hold at an angle of impact of about 90°. As a result of the impact, the "OCEAN FAME" swung off to starboard and the starboard side of the "IRTYSHSK" slid down her port side. The chief officer immediately rang 'half ahead' on the telegraph and then stopped the vessel at 0631. He quickly ran below and awakened the master who had been unaware of the collision; he also notified the engine-room.

The position of the collision was reported to be 48°33'N, 125°33'W; visibility was approximately one cable and the wind south-easterly force 4.

The master arrived in the wheel-house moments after being called by which time the "IRTYSHSK" had disappeared into the fog. He observed that the engines were on 'stop' and that the vessel was settling with a trim by the head. Fearing that the "OCEAN FAME" was about to sink, the master called all hands to emergency stations using the public address system (P.A.) and ordered that the lifeboats be cleared away, ready for lowering. He also ordered both deck and engine-room departments to carry out a damage assessment immediately.

At 06.30.36 the master called Tofino VTS on VHF channel 74 to inform them of the collision and warned of an emergency situation. At 06.31.46 he then broadcast a 'Mayday' situation. After a slight delay in communications due to language difficulties compounded with the excitement of the moment, the "OCEAN FAME" relayed the particulars of the collision to Tofino VTS.

Account of Events as reported by the "IRTYSHSK"

The Russian M.V. "IRTYSHSK" was operating under a 'Government of Canada Foreign Fishing Licence' which authorized her to engage in the purchasing and receiving of fish from Canadian fishing vessels operating under the terms of the over-the-side arrangements between the British Columbia Hake Consortium and CANSOV Marine Products Limited* during the period May 28, 1988 and October 31, 1988 or until an allocated quota was met, whichever was earlier. The licence also authorized the vessel to engage in supplementary hake fishing operations in designated areas when Canadian catcher vessels were unable to supply the "IRTYSHSK" with adequate volumes of hake.

The "IRTYSHSK" sailed from her home port of Petropavlovsk, Kamchatsky, on May 5, 1988 and fished for 23 days in the Bering Sea. The vessel arrived in Vancouver, June 13, to process her Foreign Fishing Vessel Licence and departed again on June 14. She commenced fishing operations off the west coast of Vancouver Island, June 15 at 1210, in position 49°29'N, 125°54'W within her authorized fishing zone. She transhipped her catch to other Soviet vessels on various occasions and on August 7, she called into Mayne Bay to tranship a catch before proceeding again to the fishing zone. On the evening of August 23, she fished alongside the Canadian fishing vessels "BLUE WATERS" and "ROYAL CANADIAN" until 2250 when she departed to area 5-1B to fish on her own (see Annex No.3 for fishing areas).

The "IRTYSHSK" had a crew of 91 on board and one Canadian Fisheries observer.

At 0200 August 24, the "IRTYSHSK" set her trawl and commenced fishing in an area around 48°16'N, 125°44'W. The master was on the bridge until 0230 at which time he passed the conduct of the vessel to the second officer and, after relaying his night orders, retired to his quarters.

The navigating officers on the "IRTYSHSK" stood a conventional 4 on, 8 off watchkeeping system. The second officer stood the 0000-0400 watch, the chief officer the 0400-0800 watch and the third officer, the 0800 -1200 watch. Ship's clocks on board the "IRTYSHSK" were kept on UTC minus 8 hours and times have been converted for this report, therefore watch changes are one hour different to the given times.

*a Canadian Soviet Company with Head Offices in Halifax, N.S.

The vessel ceased trawling at 0340 and commenced recovering her trawling gear in order to proceed in a northerly direction to fishing area 5-1A to rendezvous with Canadian catcher vessels. The "IRTYSHSK", and other Soviet trawlers participating in the joint fishery, received their assignments from the CANSOV Marine representative on board the "IRTYSHSK" whose duty it was to orchestrate the fishing activities. The vessels also communicated on a regular basis with the Soviet Fleet Commander on board the "MYS OBRUCHYEVA" to obtain information on the best fishing areas. Updated communications were generally made about 0600 and the "IRTYSHSK" was to establish further communications with these vessels.

At 0450 the chief officer relieved the wheel-house watch and the second officer proceeded below. Wheelsmen also relieved the watch at 0500 and in the engine-room, the second engineer, the third electrician, a mechanic and two motormen, relieved the engine-room watch.

At 0500 the "IRTYSHSK" was in position 48°22.9'N, 125°51.4'W, steering 045°T&G, at a speed of approximately 14 knots. Visibility was four to six miles and the vessel was on automatic steering with the engines on bridge control. Both radars were switched on, the port one being left on stand-by and the starboard radar in use on a relative motion, stabilized, north-up presentation. All bridge and steering gear equipment was reportedly in good working order. Navigation was by radar bearings and distances off Cape Beale and occasional positions by satellite navigation.

The radars were not equipped with reflective plotters and radar plotting was carried out on paper manoeuvring boards on a table adjacent to the starboard radar,

At approximately 0520 visibility deteriorated and the chief officer adjusted the propeller pitch reducing the vessel's speed to 12 knots.

At 0535, in position 48°29.5'N, 125°41.4'W, visibility was 2 to 3 miles and the vessel was placed in hand electric steering with the wheelsman at the wheel and the course was adjusted to 046°T&G. The radar was being utilized to scan the different range scales to identify traffic which may be on a collision course amongst the numerous echoes on the Plan Position Indicator (PPI) screen. The automatic fog signal was switched on, a look-out was posted on the bow, and the engine-room was advised that the vessel was in fog; both wheel-house doors were in the open position.

Also at 0535 the chief officer began plotting two targets which he observed on the radar PPI screen bearing approximately

two points on the starboard bow, at about 7.5 miles distance. The plots were run for nine minutes and at 0444 it was deduced that the targets were vessels stopped and drifting. They were thought to be the Canadian catcher vessels with which they were to rendezvous.

At 0550 the "IRTYSHSK" entered thick fog and with the visibility deteriorated to 1 to 1.5 cables, speed was reduced to 8 knots and the vessel's course was altered to 050°T&G. At 0602 the "IRTYSHSK" reported her position to Tofino VTS on VHF, channel 74: Tofino VTS acknowledged the transmission.

At 0605, in position 48°32.9'N, 125°36.5'W, an alteration of course to 090°T&G was made and the speed was further reduced to 7 knots. It was intended to manoeuvre into a position about two miles from the Canadian catcher vessels and await further orders.

At 0620 the vessel made a further course alteration to 080°T&G and immediately thereafter to 070°T&G, still proceeding at 7 knots. The chief officer was attending to his various navigational duties which included watching the depth-sounder for fish concentrations, etc.

Just prior to 0630, with visibility just under 1.5 cables, the wheelsman sighted the silhouette of a vessel, later identified as the Panamanian vessel "OCEAN FAME", approximately 15° on the starboard bow. He turned the wheel to port then back to amidships and called the chief officer who was at the starboard radar. The chief officer, who was completely surprised by the situation, moved quickly to the control console and moved the pitch control handle to 'stop' then to 'No.3 astern' position, and turned the wheel 'hard-a-port'. However, the movements were too late to avoid a collision and at 0630 the "IRTYSHSK" struck the port side of the "OCEAN FAME" forward at an angle of impact of approximately 90°.

The "OCEAN FAME" swung to starboard and the "IRTYSHSK" veered to port until the two vessels were aligned parallel to one another; they made contact twice more as the "IRTYSHSK" fell off astern of the "OCEAN FAME".

The master, who was awakened by the collision, also received a call from the chief officer. He arrived in the wheelhouse as the forward starboard side of the "IRTYSHSK" made contact with the port quarter of the "OCEAN FAME" and the bulk carrier disappeared ahead into the fog. He observed that the engines on the "IRTYSHSK" were in the 'Full astern' mode.

The position of the collision was reported to be 48°33.3'N, 125°32.5'W: visibility was under 1 cable.

On assuming conduct of the vessel the master placed the engines on 'Stop' and used the P.A. system to call all hands to emergency stations and to prepare the lifeboats for launching. He ordered that a damage inspection be carried out by both deck and engine-room departments without delay. When stopped, it was observed on radar that the "OCEAN FAME" was stopped 5.9 cables away in a 250°T direction.

Events Following the Collision

At 06.33.31, Tofino VTS broadcast a 'Mayday Relay' on VHF channel 74 and at 0635, reported the collision to Rescue Coordination Centre (RCC) Victoria.

Numerous vessels responded to the 'Mayday Relay' and were tasked by RCC, Victoria, including the U.S. Coast Guard (USCG) Cutter "CLOVER", the Canadian Naval Auxiliary vessel (CNAV) "GLENDYNE", the Department of Fisheries and Oceans (DFO) vessel "JAMES SINCLAIR", the bulk carrier "GOLDEN ENTERPRISE", the Russian vessel "MYS OBRUCHYEVA" and the Canadian fishing vessels "STRIDER NO.1", "ROYAL CANADIAN" and the "SEA CREST".

In addition to the surface vessels tasked, RCC tasked the Labrador helicopter "R 311" and the Buffalo fixed-wing aircraft "R 451" from 442 Transport and Rescue Squadron, Canadian Forces Base (CFB), Comox, at 0638.

At 0635, on completion of a cursory damage inspection on board the "OCEAN FAME", which included the sounding of all compartments, the master informed Tofino VTS that his vessel was badly holed in No.1 cargo hold and taking water: all other compartments were secure. He also indicated that they were preparing to lower the lifeboats.

The "IRTYSHSK" maintained radio silence until 06.38.18 when she transmitted an S.O.S. message by radiotelegraphy, on 500 kHz (MF) and repeated the S.O.S. at 06.50.16; she also reported the collision to Tofino VTS on channel 74 VHF at 06.39.56. Having just completed her cursory damage inspection, which included sounding all compartments and launching the vessel's workboat to assess the hull damage, it was further reported that she was not taking on water. The "IRTYSHSK" also communicated with other Soviet bloc vessels in the area. She later reported their willingness to assist the "OCEAN FAME" as necessary.

At 0649 the "IRTYSHSK" communicated with the "OCEAN FAME" to inquire if she required assistance and received an affirmative reply.

At 0653 the "IRTYSHSK" reported that she was leaking

diesel fuel forward from her No.2 deep tank and the initial estimate of spillage overboard was one ton. The oil was found to be escaping via a gash on the ship's side at No.2 deep tank and also from the forepeak (No.1 deep tank) which had a partially ruptured tank top. Both tanks were full to capacity and a quantity of fuel was immediately transferred to other tanks within the vessel. It was later reported that only a minimal quantity of oil escaped: the oil dissipated and did not require containment.

At 0711 the "IRTYSHSK" confirmed to Tofino VTS that she was able to assist the "OCEAN FAME" if required however, at 0718 the "OCEAN FAME" reported that although the vessel had settled with a considerable trim by the head she was no longer in danger of sinking and did not require assistance. The master also expressed his desire to continue seaward for Japan however in light of the damage to his vessel he was dissuaded from doing so.

The fishing vessels "STRIDER NO.1", the "ROYAL CANADIAN" and "SEA CREST" arrived on scene shortly after 0700 and stood by to assist; they informed VTS that the "OCEAN FAME" was badly holed and her trim was such that her stowed anchors were under the water surface. Other vessels and aircraft arrived on scene and stood by although the fog posed a problem for the aircraft.

At 0815 the USCGC "CLOVER" arrived on scene and assumed the role of On Scene Commander (OSC): this role was later authorized by RCC Victoria. Shortly after arriving on scene the "CLOVER" instructed all vessels to switch all communications relating to the collision to VHF channel 16, the calling and distress frequency, and the smaller fishing vessels and civilian resources were stood down.

The "JAMES SINCLAIR" and the "GLENDYNE" arrived on scene at 0819 and 0847 respectively.

The master of the "OCEAN FAME" was later transported on board the workboat from the "JAMES SINCLAIR" to view the damage to his vessel from seaward and then to visit and exchange vessel particulars on board the "IRTYSHSK".

At 0855 the 'Mayday Relay' was cancelled on channel 16 VHF, and at 0910 both aircraft were stood down from the incident.

RCC, Victoria continued to co-ordinate activities relating to the collision and various agencies of the Canadian Coast Guard were contacted to deal with the emergency situation.

The "OCEAN FAME" was later boarded by a surveyor from the

Ship Safety Branch of the Canadian Coast Guard and a B.C. pilot and was escorted to Christie Bay, Barkley Sound. The vessel underwent a damage inspection by both the Ship Safety surveyor and by a classification society surveyor. Divers found No.1 cargo hold had a hole four metres in length seven metres below the water line and the vessel had lost most of her cargo from No.1 hold to the sea. She later sailed under her own power to Esquimalt, B.C. where she arrived at 1145, August 25, with a draught of 11.10 m forward and 9.31 m aft. The vessel was drydocked for repairs on September 4 and with all repairs completed, departed for Japan, September 29, 1988.

The "IRTYSHSK" transferred fuel oil and fish to the Russian vessels "27 SYEZD KPSS" and the "MYS ZOLTOY" before proceeding inwards to Christie Bay. She arrived in Christie Bay at 2030, August 24 and after inspection by a Ship Safety Surveyor, the vessel proceeded under her own power to Vancouver, B.C. for repairs. She arrived in Vancouver August 29 and with repairs completed, departed for the Soviet Union, November 12, 1988.

Analysis

1. Certification

The vessels were in possession of Certificates as follows:

"OCEAN FAME"

Cargo Ship Safety Equipment	issued at Imbari, Japan, June 29.88, valid until November 28,1988
Cargo Ship Safety Construction	issued at Tokyo, Japan, August 19, 1986, valid until July 29, 1991
Second Mandatory Annual Survey	Imbari, Japan., June 29.1988
Cargo Ship Radio-telegraphy	issued at Imbari, Japan, June 29,1988, valid until November 28, 1988
International Load Line	issued at Tokyo, Japan, August 19, 1986, periodic inspection carried out at Imbari, Japan, June 29, 1988

"IRTYSHSK"

International Load Line	issued at p.Nokolayev, USSR, April 19, 1985, valid until April 18.90, periodic inspection carried out at Singapore, April 18,1988
Ship Station (Radio) Licence	issued at Petropavlovsk, Kamchatsky, USSR, December 2, 1985, valid until April 18,1989
Cargo Ship Safety Equipment	valid until April 18 1989
Cargo Ship Safety Construction	valid until April 18, 1989

Canadian Government Foreign Vessel Fishing Licence No. FP03290, issued at Vancouver, B.C., May 24, 1988, valid until October 31,1988.

2. Cargo Holds and Fuel Tanks

"OCEAN FAME"

The No.1 cargo hold (frames 143 to 179, numbered from aft), has a grain capacity 6,727.72 m . At the time of the collision all cargo holds were full of barley except No.1 hold which contained 3,514.35 tonnes; 1,505 cu m of free space remained in the hold.

Also between frames 143-179, the vessel has port and starboard double bottom tanks used for water ballast and No.1 top side tanks, which were empty at the time of the collision. The vessel's No.'s 1, 2 and 3 fuel oil tanks are centre tanks located beneath No.'s 2, 3 and 4 cargo holds respectively. None of these fuel tanks was ruptured as a result of the collision.

"IRTYSHSK"

Nos.1 and 2 forward deep tanks were full of diesel oil at the time of the collision, however, the ice strengthening at the fore part of the vessel prevented excessive damage to those tanks and reportedly only a minimal amount of oil escaped overboard from a partially ruptured tank top at No.1 deep tank and a gash at the starboard side of No.2 deep tank. The contents of the tanks were transferred to other compartments within the vessel to bring the oil levels below the damage and the remainder later trans-

ferred to another Soviet ship.

3. **Damage**

The "OCEAN FAME" suffered damage to her shell plating from deck level to the top of No.1 double bottom tank slope plating, open about 10.5 m at deck level and tapering down in the form of a 'V' to the double bottom.

Her main deck stringer and adjacent deck plating over 10 m, was torn and distorted narrowing to 3 m inboard and buckled from there to the edge of the hatch. The hatch coaming was also buckled and the steel hatch section damaged and displaced.

The "IRTYSHSK" suffered extensive damage mainly to her bow section above the waterline with shell plating gashed, torn and upset; damaged plating included the sheer strake and six strakes below, for a length of approximately 9 m from forward.

Damaged areas included the forward 3 m of the weather deck which was bent downwards; the forecastle 'tween deck' and 'main deck' storage compartments badly torn and gashed; and the forward bulkhead of the chain locker and forepeak tank top gashed and torn. The No.2 Deep Tank immediately aft of the forepeak bulkhead was also badly gashed.

4. **Navigation Appliances**

The navigation appliances and steering gear on both vessels were reportedly in good working order prior to the collision and there was no reported malfunction of machinery on either vessel.

Neither vessel had a gyro compass error.

5. **Radar**

The "OCEAN FAME" was being navigated with the radar on a relative motion display, gyro stabilized, north-up presentation. Positions were being plotted on the chart at regular intervals using radar ranges and cross-bearings from known points of land.

Plotting was being carried out on the radar reflection plotter using a grease pencil, to determine the movements of approaching traffic.

The "IRTYSHSK" was being navigated with the radar in a relative motion gyro stabilized, north-up presentation.

Positions were being plotted on the chart at regular intervals using a bearing and distance from Cape Beale and occasional satellite fixes when available.

Plotting was being carried out on standard paper manoeuvring boards.

Reportedly the "IRTYSHSK" did not see the "OCEAN FAME" as a radar target on her screen prior to the collision. Such a failure to detect a target is inexplicable as it is known that the radar set in use was operating well.

6. Publications

Charts and publications on board both vessels were current editions and kept in good order. The Bridge log books were kept in a professional manner.

"OCEAN FAME"

On the early morning before the collision the master conveyed his night orders verbally to the second officer to be passed on to the chief officer. There was a master's night order book in the chart room which had been used recently when approaching the west coast of British Columbia and also a set of master's orders and standing orders.

"IRTYSHSK"

On the early morning before the collision the master conveyed his night orders to the second officer to be passed on to the chief officer. There was a master's night order book in the chart room, however, as the master was in the wheel-house so often during fishing operations, it had not been used in recent days. There was a set of master's orders and standing orders in the wheel-house.

7. Weather

The marine forecast for the WEST COAST VANCOUVER ISLAND, SOUTH SECTION, issued by Environment Canada at 1745, August 23, 1988 for the period ending 1800, August 24 with an outlook for the following 24 hours, was as follows:

> Winds variable 5 to 15 knots. A few clouds.
> Outlook. Moderate to strong northerly winds

The forecast issued at 0545, August 24, 1988 for the period ending 0600, August 25 with an outlook for the following 24 hours was as follows:

Winds SE'ly 10 to 20 knots. A few clouds. Fog patches in the south reducing the visibility to near zero. Isolated showers in the south this afternoon. Outlook. Moderate to strong southerly winds.

Tides

Low water at Tofino, the nearest tidal reference point to the area of the collision, was predicted to be at 0455, August 24, 1988 with a height of 1.8 m above chart datum and the next high water was predicted to be at 1140 with a height of 9.1 m above chart datum.

The collision occurred at approximately 5.2 hours before HW and as indicated on the tidal stream rose on CHS chart No. L/C 3602, the tidal current in the general area of Swiftsure Bank was in a 317°T direction at 1 knot.

8. Tofino VTS

Tofino VTS handles VTS communication from Cape Scott to the entrance to Juan de Fuca Strait including Alberni Inlet (see Annex No.4). Details of the area coverage and reporting requirements may be found in the Annual Edition of Notices to Mariners, published by the Canadian Coast Guard, Aids and Waterways Branch.

The Tofino VTS station is manned on a three shift system, each shift comprising of a marine traffic regulator and a watch supervisor. The officer in charge of the station is also present during regular day working hours and is otherwise on call. As of 1984/85 operational staff at Tofino VTS station was cut back from 18 persons to 12 persons.

The watch supervisor and the marine traffic regulator share both the traffic regulator duties, where they are stationed at the radar surveillance and communication equipment and the general watchkeeping administration duties. They attempt to rotate position every two hours if the workload permits. The station is also equipped with a radar video tape recording system, which reportedly is unreliable. It was not in use at the time of the casualty.

On the morning of August 24, 1988, just prior to the collision, there were 14 deep sea vessels in transit through the Tofino VTS zone, 14 vessels from the Soviet bloc trawler/factory fleet and their associated Canadian catcher vessels working in the area and a large

concentration of Canadian fishing vessels.

Although no count was made on the morning of August 24, Ucluelet radar troller counts, made by representatives from the Department of Fisheries observing from Tofino VTS radars on other occasions were as follows:

Time	Date	No.Vessels	
0800	August 21, 1988	286	+ 8 above Estevan Pt.
1800	August 21, "	305	+ 9 above Estevan Point
0800	" 22, "	456	+ 24 " "
1500	" 22, "	426	+ 21 " "
0800	" 23, "	538	+ 21 " "
1500	" 24, "	225	+ 3 " "

The radar surveillance equipment used at the station is an S-band radar with the scanner located on Mount Ozzard 48°57.5'N, 125°29.5'W. The radar is capable of being set on scales from 2 to 64 miles and has the capability of automatically tracking 40 vessels.

On the morning of August 24, 1988 in addition to the heavy traffic in the Tofino VTS zone, thick fog was being experienced and communications with another deep-sea vessel in transit at 0614 that morning would tend to indicate that radar return may have been less than optimum due to weather conditions.

During extremely busy times such as experienced on August 24, 1988, the radar is utilized mainly on the 64 mile range in order to better track traffic throughout the zone and approaches thereto; a second radar surveillance console nearby is unused due to lack of manpower.

9. VTS Reporting

(i) The "OCEAN FAME" participated fully in the Vessel Traffic Services Reporting System since departing from Vancouver. She passed through the Vancouver VTS zone and at Race Rocks was 'handed off' to the U.S.Coast Guard, Seattle VTS Centre for the outward passage through the Strait of Juan de Fuca. At 0352, August 24, 1988 she crossed the Traffic Separation Line and was 'handed off' to Tofino VTS. The vessel reported at buoy 'J', south of Bonilla Point, at 0401 at which time she was cautioned on the number of fishing vessels ahead and also advised of heavy fog. She was then instructed to report again at Amphitrite Point, the next Calling-in-Point (CIP) on her route.

At 0534 Tofino VTS again cautioned the "OCEAN FAME" on the

numerous fishing vessels ahead of her.

Whilst transiting the VTS zone the "OCEAN FAME" was plotted by the VTS computer-assisted radar plotting system at six minute intervals. Plotting commenced at 0340 and continued until after the collision.

(ii) Under the conditions of the Foreign Fishing Vessel Licence, Soviet vessels, while operating in Canadian fisheries waters, were required to report their vessel's name and position three times daily between 0600-0700; 1200-1300 and 2000-2100, to Tofino VTS on VHF channel 74; they were also obliged to maintain a continuous listening watch on 2182 kHz.

A communication was transmitted by the Surveillance and Enforcement Branch, Department of Fisheries, to the Soviet Fleet Commander on June 22, 1988. The communication expressed concerns raised by Tofino VTS on problems encountered with the position reporting routine that included poor reception, unreadable English and an apparent failure by some vessels to stand by on VHF channel 74.

The "IRTYSHSK" reported her position to VTS at 0602 as being 48°31'N, 125°39'W. At this period in time the marine traffic regulator, in addition to his normal duties, received a total of 10 position reports on 12 Soviet vessels between 05.59.42 and 06.10.21. This information was entered directly into a computer adjacent to the console unavoidably interupting the regulator's radar surveillance.

The "IRTYSHSK" was not being plotted by the VTS computer-assisted radar plotting system due to the inability of the radar tracker to maintain a constant track on the operation of the Soviet vessels. This is attributed to the following factors:

(a) The discrimination of the Tofino Traffic S-Band radar and its interfaced tracking system is limited, as the radar may generate a radar return from a target which can, on occasion, result in the tracker being unable to distinguish between the return from a relatively large target vessel and the return from a small target vessel. Since the Soviet vessels operate in close proximity to each other and to their Canadian catcher vessels this leads to the automatic exchange or transfer of alpha-numeric identification tags between targets when in close proximity, thereby making continuous proper target

identification not always possible.

(b) The ability of the tracker to continuously track a target is dependent largely on the aspect that the target is presenting to the Tofino S-Band radar. A target can blossom or virtually disappear, depending on its aspect. In the case of the Soviet vessels their courses and speeds are being continuously altered, are erratic and are unpredictable due to the unique nature of their employment.

(c) The Tofino S-Band radar range and bearing discrimination of distant targets is not precise due to the physical technical limitations of such equipment at such a distance. The Soviet vessels operating in close proximity to large concentrations of smaller Canadian fishing vessels often present similar sized radar targets. The size of the target on the P.P.I. screen is not consistent with the relative size of a vessel.

VTS General

The marine traffic regulator on duty at the time of the collision did not observe on radar the "IRTYSHSK" approaching from the south-west. He checked his P.P.I. screen immediately on hearing the "OCEAN FAME" calling the eastbound vessel at 06.27.36 and again, did not see any echo on his screen close to the "OCEAN FAME" other than the "GOLDEN ENTERPRISE" which was approxmately 1.3 miles on her port quarter. The collision took place some 25 miles distant from the Mount Ozzard radar scanner site.

10. **Average Speeds**

"OCEAN FAME"

The distance made good by the "OCEAN FAME" between the 05.32.33 and 06.20.31 positions as plotted by VTS was 10.46 miles, giving the vessel an average speed of 13.07 knots over the ground.

The distance made good by the "OCEAN FAME" between the 0530 position and the collision position at 0630 as plotted by the officer of the watch, was 12.1 miles, giving an average speed of 12.1 knots over the ground.

"IRTYSHSK"

Positions as plotted on the chart by the officer of the watch on board the "IRTYSHSK" indicate that the vessel

made good a distance of 12.3 miles between 0500 and 0550, giving an average speed of 14.76 knots over the ground. The tracks after the 0550 plot involve a large course alteration and the vessel made good a distance of 4.5 miles to the collision position reported to be at 0630; this gives the vessel an average speed of 6.75 knots over the ground.

11. Times of VHF Communications

VHF radiotelephone transmissions on channels 16, 11 and 74 were recorded by Tofino VTS.

The tapes indicate that the times at which the "OCEAN FAME" called the approaching eastbound vessel were 06.27.36 and 06.28.16. The vessel's evidence was that the two vessels were approximately 1 mile and 0.5 mile apart, respectively, at these times.

While a time, speed and distance calculation, based on the two vessels' approximate directions of travel, reported average speeds of 12.1 and 6.75 knots respectively and on the estimated tactical diameter of the "OCEAN FAME" (580 metres approx), would appear to confirm that they were 0.5 mile apart at 06.28.16, the same calculation would appear to indicate that the two vessels were on a reciprocal bearing of 278°/098° and that they were approximately 0.75 mile, and not the estimated 1 mile, apart at 06.27.36.

The same calculation would appear to indicate that the two vessels were about 1 mile apart about 06.26.15.

12. Language Difficulties

As witnessed by the VTS tapes, some language difficulties existed in communicating with the Korean nationals on board the "OCEAN FAME" particularly after the collision when excitement was high, however, it is not considered to have been a contributing factor to the collision on the part of the "OCEAN FAME" and all communications prior to the collision were apparently understood by them.

Only the Canadian fisheries representative on board the "IRTYSHSK" was fluent in English; neither the officer of the watch nor the quartermaster at the wheel at the time of the collision, could speak English.

It was reported that the VHF radios on board both vessels were guarding channel 74 as required.

13. **Warning to Mariners**

The fourteenth edition of the Sailing Directions for the British Columbia Coast (South Portion), Chapter 10, paragraph 11 and the 1988 Annual Edition of Notices to Mariners, Chapter 8, paragraphs 1 and 3, both warn mariners that during the period from approximately April 15 to approximately September 30, 1988, large numbers of fishing vessels may be encountered at La Perouse and Swiftsure Banks in the approaches to Juan de Fuca Strait. Mariners are also warned of the prevalence of fog and low visibility in these areas and are advised to navigate with extreme caution (see Annex Nos. 5 and 5A).

Canadian Hydrographic Service Chart No. L/C 3602, Caution 'B', also warns of concentrations of fishing vessels.

Notice to Shipping (NOTSHIP) W-1098, issued June 20, 1988 by the Canadian Coast Guard, Western Region, and re-issued on July 14 and August 17, 1988 also warns of large concentrations of fishing vessels. (See Annex 5B).

14.a) Collision Regulations

(The full text of referenced Rules is given in Annex No.6)

(i) Rules 1(a) and 2(a) of the International Regulations for Preventing Collisions at Sea, 1972 (Collision Regulations) indicate the application of the regulations and the responsibilities of the operators of vessels to comply with the regulations. Within the meaning of both of these sections the "OCEAN FAME" and the "IRTYSHSK" are equally bound to comply.

(ii) Part B, Section 1, Steering and Sailing Rules, comprising of Rules No.4 to 10 inclusive, apply in any condition of visibility.

Rule 5 of the Collision Regulations, stresses the requirement for a proper look-out to be maintained by hearing as well as by sight and other appropriate means.

In the case at hand the bridge watch on board the "OCEAN FAME" comprised of the officer of the watch and a wheelsman who was stationed at the wheel steering the vessel. No look-out was posted within the meaning of Rule 5 to give full attention to that task even after the vessel entered thick fog.

On board the "IRTYSHSK" although VHF channel 74 was

turned on in the wheel-house neither the officer of the watch nor the wheelsman could speak English and the transmissions by the "OCEAN FAME" immediately prior to the collision went unrecognized.

(iii) Rule 6 of the Collision Regulations, refers to safe speed and the determining factors to be taken into account such as: the state of visibility, the traffic density including concentrations of fishing vessels or any other vessels, and the number, location and movement of vessels detected by radar.

In the case at hand visibility was approximately 0.1 mile and the "OCEAN FAME" was proceeding at between 12 and 13 knots over the ground in an area with large concentrations of fishing vessels and with a vessel approaching on a collision course.

(iv) Rule 7 of the Collision Regulations, requires that every vessel shall use all available means to determine if risk of collision exists, with emphasis on the need for proper use of radar equipment.

The "IRTYSHSK" did not detect the presence of the "OCEAN FAME" on the radar although it was reported that a close watch was being kept on the radar for traffic including scanning the ranges.

During the casualty investigation process on August 29, 1988, the radar was switched on and found to be in working order and no blind sectors were found which could account for the target not being detected.

(v) Rule 8 of the Collision Regulations, under the heading 'Action to Avoid Collision' states in part:

> (a) Any action taken to avoid collision shall, if the circumstances of the case admit, be positive, made in ample time and with due regard to the observance of good seamanship.

Rule 8 also indicates that if necessary, to avoid a collision or allow more time to assess the situation, a vessel shall slacken her speed or take all way off by stopping or reversing her engines.

The officer of the watch on board the "IRTYSHSK" was not aware that his vessel was in a collision situation.

The officer of the watch on board the "OCEAN FAME" did not alter course to avoid collision until approximately 2.4 minutes before the collision, at which time the "IRTYSHSK" was less than 1 mile off; neither did he adjust the vessel's speed to avoid a collision or to allow more time to assess the situation. An alteration of 45° to starboard made with 20° starboard helm, was not positive enough under the circumstances.

(vi) Part B, Section III, Rule 19 of the Collision Regulations under the heading 'Conduct of Vessels in Restricted Visibility' requires that every vessel shall proceed at a safe speed adapted to the prevailing circumstances and conditions of restricted visibility. The main factors to be taken into account in determining a safe speed are listed in Rule 6.

Rule 19 also requires a vessel, which detects the presence of another vessel by radar alone, to determine if risk of collision exists and to take avoiding action in ample time.

As previously remarked in the analysis of Rule 6 and Rule 8, the "OCEAN FAME" was proceeding at between 12 and 13 knots over the ground in thick fog and did not take avoiding action in ample time.

(vii) Part D, Rule 35 of the Collision Regulations under the heading 'Sound Signals in Restricted Visibility', requires that a power driven vessel making way through the water shall sound at intervals of not more than two minutes, one prolonged blast.

Both vessels were reportedly sounding the required fog signal and each had their wheel-house doors open, however, the "OCEAN FAME" reported that the only sound signal heard was one long blast off the port bow about 06.28 and the "IRTYSHSK" reports hearing no signals until after the collision. The look-out posted forward on the "IRTYSHSK" was not aware of the other vessel until it appeared almost ahead of him and he had to run aft to safety.

14.b) Code of Nautical Procedures and Practices (1985)

(The full text of the referenced Part is given in Annex 7).

The Canadian Coast Guard publication TP1018, 'Recommended Code of Nautical Procedures and Practices', 1985, 3rd Edition, contains International Maritime

Organization (IMO) Regulations and Resolutions based upon the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978. Amongst others, the Code recommends that in determining the composition of the bridge watch and in particular the need for maintaining a proper look-out, the visibility and whether there is daylight or darkness, should be taken into account and also the proximity of navigational hazards which make it necessary for the officer of the watch to carry out additional navigation duties.

The Code also recommends that the look-out must be able to give full attention to look-out duties and that the helmsman, in the case of a vessel such as the "OCEAN FAME", shall not be considered to be the look-out while steering.

15. **S.A.R. Vessels**

The following vessels and aircraft were tasked to the scene of the collision by RCC, Victoria:

0636 The USCG "CLOVER" arrived on scene at 0815 and assumed the roll of O.S.C.

0637 The "MYS OBRUCHYEVA" was 5 miles from the scene and responded to the 'Mayday Relay' broadcast.

0638 Buffalo aircraft "R451" and Labrador helicopter "R311" from 442 Transport and Rescue Squadron, CFB, Comox, arrived on scene at 0753 and 0812 respectively.

0638 The DFO vessel "JAMES SINCLAIR" arrived on scene at 0835 and the CNAV "GLENDYNE" arrived on scene at 0847.

0638 The F/V "ROYAL CANADIAN", located about 6 miles from the collision, arrived on scene at 0728.

0652 The F/V "STRIDER ONE", located a few miles from the collision, arrived on scene at 0721.

0658 The F/V "SEACREST" was 1-1/2 miles distant and was the first vessel to arrive on scene at 0700.

0649 The "IRTYSHSK", having established that she was not in danger of sinking, offered assistance to the "OCEAN FAME".

Other vessels that responded to the 'Mayday Relay' were the "BEAUGARD", the "FREE ENTERPRISE" and the "MIS VALTESA".

There were 13 Soviet Bloc vessels in the vicinity of the west coast of Vancouver Island on the morning of August 24, engaged either in co-operative fishing, national fishing or in transhipping. All these vessels offered assistance.

16. Previous collisions off the West Coast of Vancouver Island

In the area 48°20'N to 49°30'N and 124°40'W to 127'00'W; i.e. roughly a rectangle with Carmanah Point to the East, Esperanza Inlet to the north-west at Cape Flattery to the south, since computer records were started by Marine Casualty Investigations in 1975, the following collisions have been recorded:

Year	Number	Vessel Type
1975	1	container vessel/fishing vessel
1976	2	Unidentified cargo vessel/ fishing vessel fishing vessel/fishing vessel
1977	2	Unidentified cargo vessel/ fishing vessel cargo vessel/tug
1978	2	fishing vessel/fishing vessel tug and barge/fishing vessel
1979	2	cargo vessel/fishing vessel fishing vessel/fishing vessel
1980	1	cargo vessel/fishing vessel
1981	1	pleasure craft/fishing vessel
1984	2	cargo vessel/fish factory vessel chemical tanker/fishing vessel
1985	1	fishing vessel/fishing vessel
1986	2	fishing vessel/fishing vessel container vessel/pleasure craft
1988	2	fishing vessel/fishing vessel *cargo vessel/fish factory vessel

1989 (to June) 1 cargo vessel/Canadian naval vessel

*"OCEAN FAME"/"IRTYSHSK"

The Tofino radar system, with the antenna sited on Mount Ozzard, became fully operational in July, 1981.

17. Experience and Qualifications of Personnel

"OCEAN FAME"

The master of the "OCEAN FAME" holds a Republic of Panama Master Foreign-Going Certificate of Competency, issued October 21, 1987 and a Republic of Korea First Class Deck Officer Certificate of Competency, issued October 3, 1986. He has eighteen years sea-going experience of which nine years were as master; he joined the "OCEAN FAME" June 27, 1988.

The chief officer of the "OCEAN FAME", who was the officer of the watch (OOW) at the time of the casualty, holds a Republic of Korea Second Class Deck Officer's Certificate of Competency, issued June 13,1986. He has fifteen years sea-going experience of which seven years were as chief officer. He served two years with the present company and first joined the "OCEAN FAME", September 15, 1986.

The quartermaster on duty on the "OCEAN FAME" at the time of the collision, had three years sea-going experience. He sailed for two months on the "OCEAN FAME".

"IRTYSHSK"

The master of the "IRTYSHSK" holds a USSR Captain Ocean Fishing Certificate of Competency issued September 1981; he has fifteen years sea-going experience of which eight years were as master. He joined the "IRTYSHSK" June 24, 1987.

The chief officer of the "IRTYSHSK", who was the OOW at the time of the casualty, holds a USSR Ocean Navigator Certificate of Competency issued June 20, 1987. He has seven years sea-going experience; he joined the "IRTYSHSK" in December 1987.

The seaman 1st Class on quartermaster duty on the "IRTYSHSK" at the time of the collision, had seven years sea-going experience; he joined the "IRTYSHSK" May 5, 1988.

Findings

On August 24, 1988, the Panamanian bulk carrier "OCEAN FAME" was in collision with the Soviet factory stern trawler "IRTYSHSK" during fog in a position 20 miles south-west of Cape Beale, British Columbia: both vessels sustained extensive damage.

It would appear that the following factors contributed to the collision:

"OCEAN FAME"

- did not take the appropriate action in ample time to avoid a close quarters situation;
- did not proceed at a safe speed in fog, with advertised heavy marine traffic showing on the radar screen, in an area well publicized to have heavy concentrations of fishing vessels; and
- did not post a look-out outside the wheel-house to give undivided attention to that task and to listen for the fog signals of approaching vessels.

"IRTYSHSK"

- for undetermined reasons did not detect the presence of the "OCEAN FAME" on radar and thus took no prior action to avoid the collision; and
- did not have a person on watch conversant in the English language to maintain a proper VHF listening watch. The warning transmissions made by the "OCEAN FAME" on channel 74 went unheard or were not understood.

Other Findings

Tofino VTS did not detect the movement of the "IRTYSHSK" prior to the collision.

There was no Tofino VTS radar video of the collision, as it was stated that the recorder was unreliable.

Both vessels were operating with one qualified officer on the bridge, the master not having been called, in conditions of heavy fog and marine traffic.

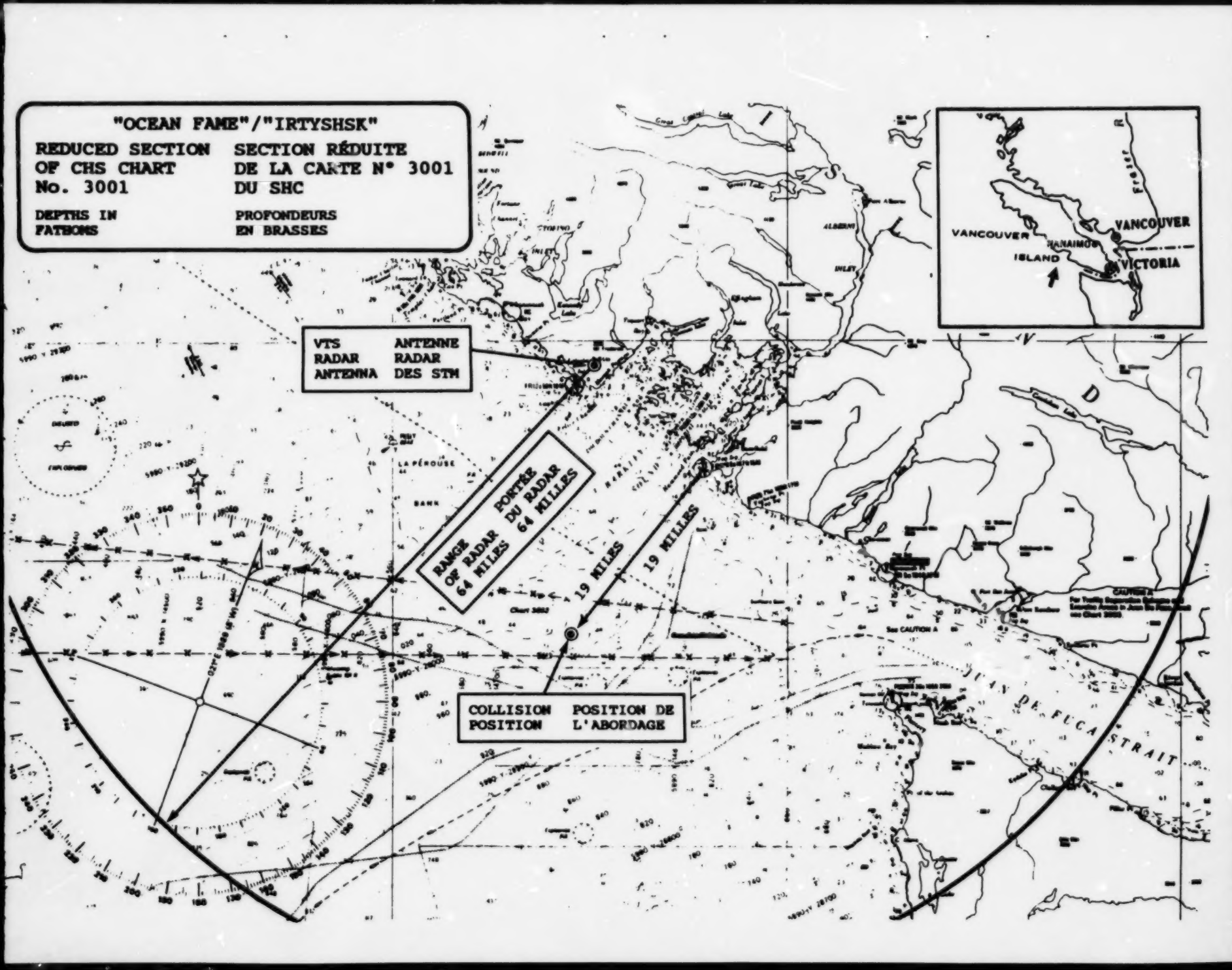
During periods of numerous vessel movements in the Tofino radar surveillance area, particularly when there are

seasonal concentrations of fishing vessels, VTS regulators are unable to effectively monitor all potentially dangerous close-quarters situations.

Notwithstanding the heavy damage sustained in the collision, the initial assessment made by the "OCEAN FAME" was that the vessel was sufficiently seaworthy to continue her voyage.

MARINE CASUALTY INVESTIGATIONS
TRANSPORT CANADA
110 O'CONNOR STREET
OTTAWA, ONTARIO
K1A 0N5

OTTAWA, ONTARIO
SEPTEMBER, 1989.


"OCEAN FAME"/"IRTYSHSK"
REDUCED SECTION OF CHS CHART No. 3001
SECTION RÉDUITE DE LA CARTE N° 3001 DU SHC
DEPTHS IN FATHOMS
PROFONDEURS EN BRASSES
VTS RADAR ANTENNA
ANTENNE RADAR DES STM
RANGE OF RADAR 64 MILES
PORTÉE DU RADAR 64 MILLES
19 MILES
19 MILLES
COLLISION POSITION
POSITION DE L'ABORDAGE
VANCOUVER ISLAND
VANCOUVER
VICTORIA
JUAN DE FUCA STRAIT

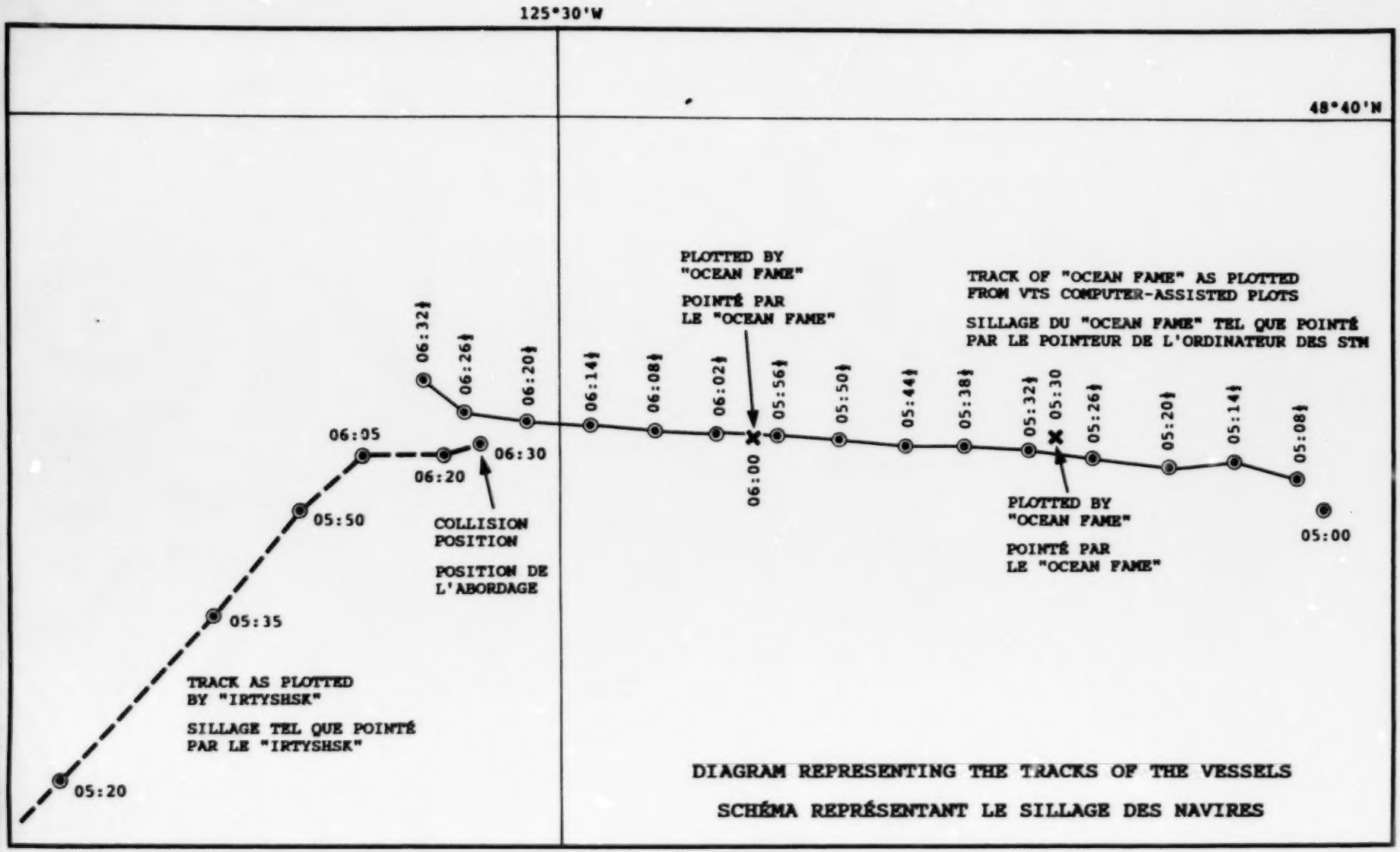
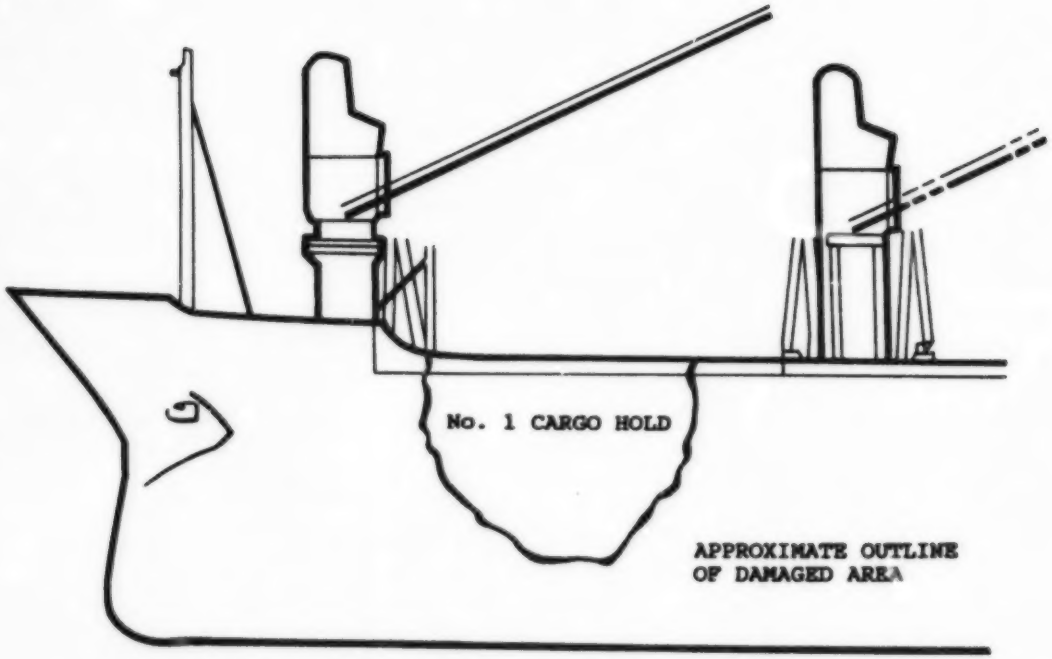


DIAGRAM REPRESENTING THE TRACKS OF THE VESSELS

SCHÉMA REPRÉSENTANT LE SILLAGE DES NAVIRES



PARTIAL PROFILE SHOWING AREA OF DAMAGE
TO THE "OCEAN FAME"

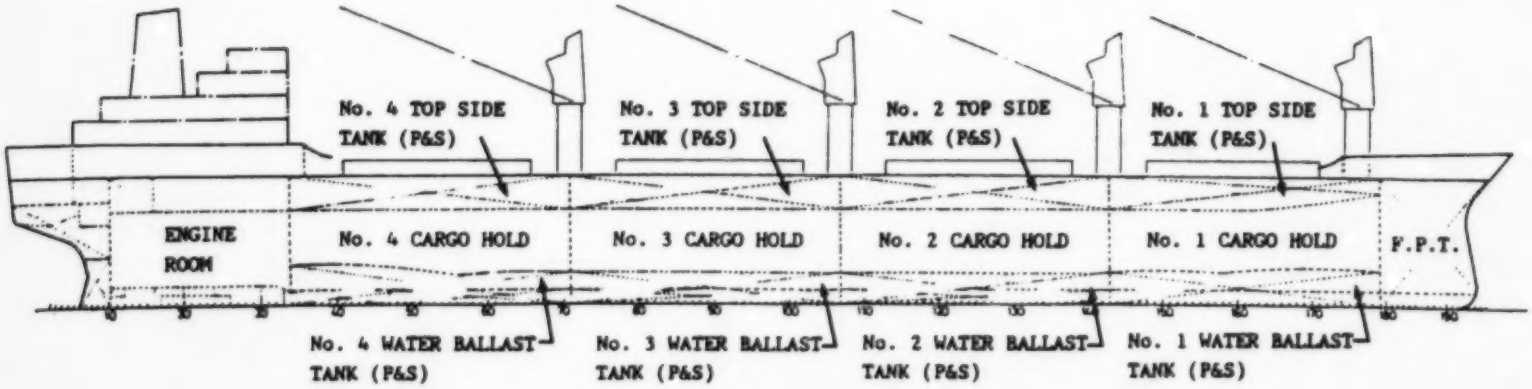
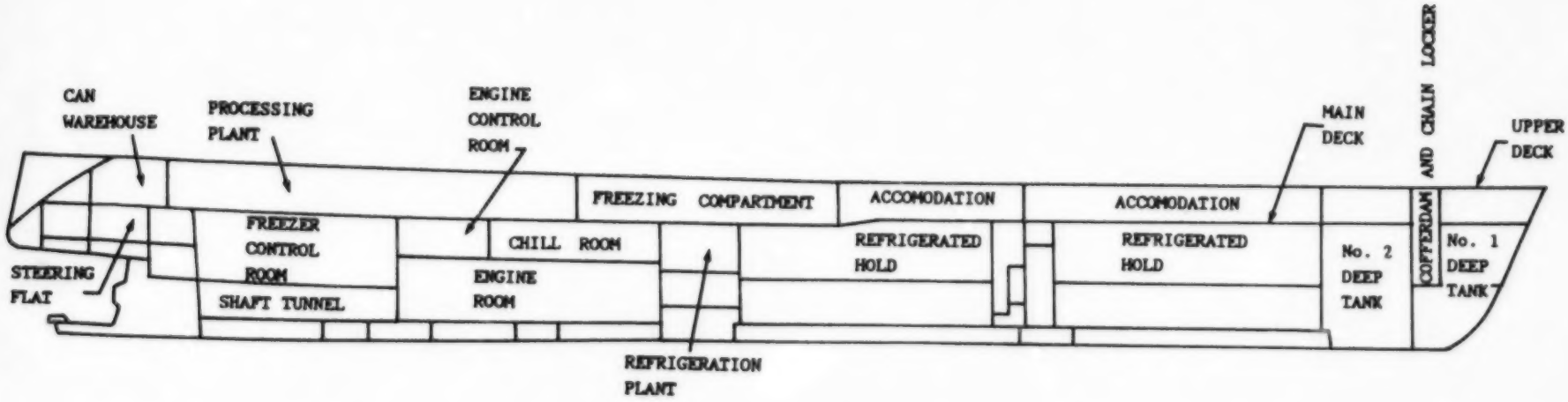
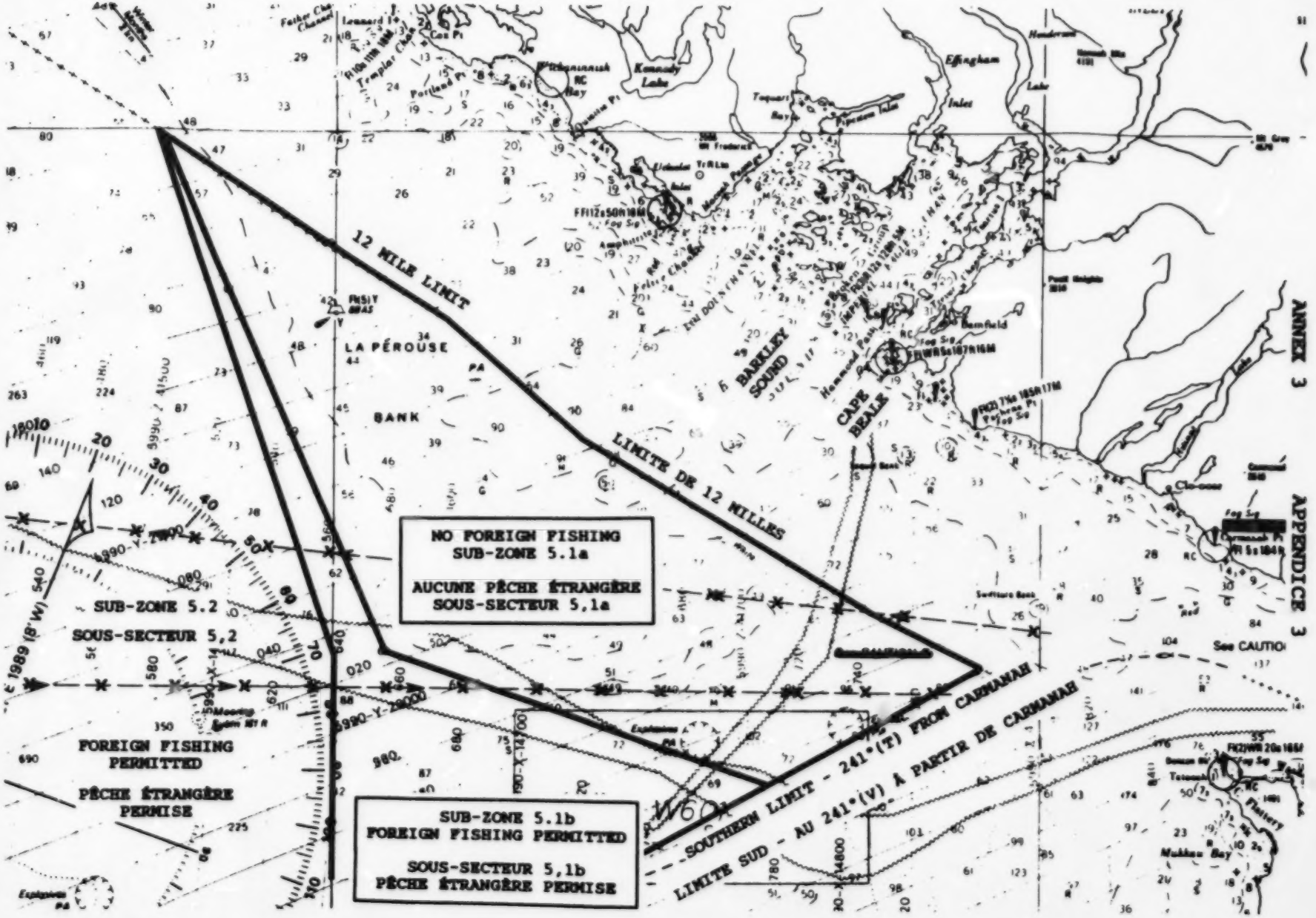


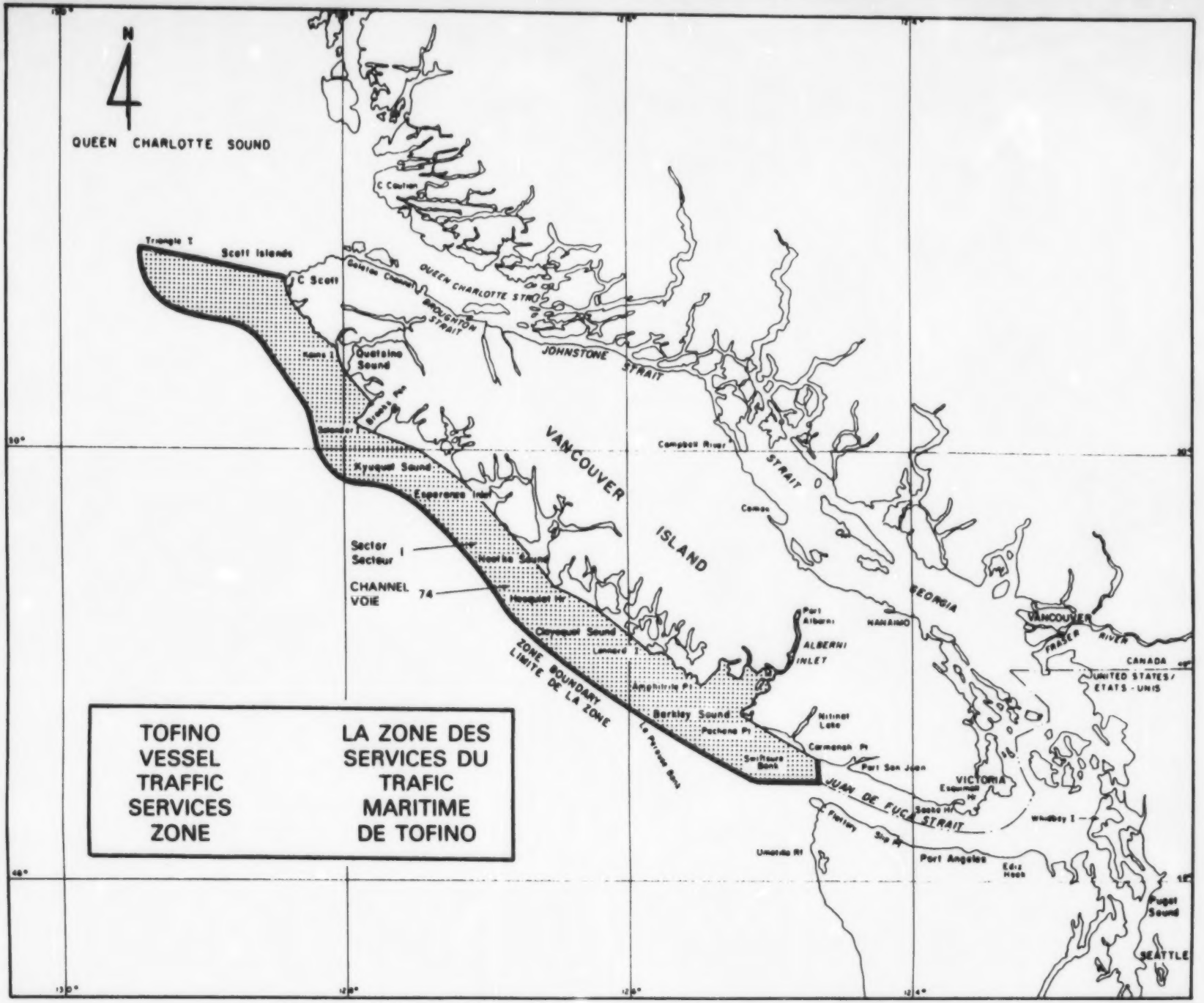
DIAGRAM OF "OCEAN FAME" SHOWING MAJOR COMPARTMENTS



LAYOUT OF "IRTYSHSK"

ANNEX 2


12 MILE LIMIT
LIMITE DE 12 MILLES
LA PÉROUSE
BANK
BARKLEY SOUND
CAPE BEALE
NO FOREIGN FISHING
SUB-ZONE 5.1a
AUCUNE PÊCHE ÉTRANGÈRE
SOUS-SECTEUR 5,1a
SUB-ZONE 5.2
SOUS-SECTEUR 5,2
FOREIGN FISHING
PERMITTED
PÊCHE ÉTRANGÈRE
PERMISE
SUB-ZONE 5.1b
FOREIGN FISHING PERMITTED
SOUS-SECTEUR 5,1b
PÊCHE ÉTRANGÈRE PERMISE
SOUTHERN LIMIT - 241°(T) FROM CARMANAH
LIMITE SUD - AU 241°(V) À PARTIR DE CARMANAH


N
4
QUEEN CHARLOTTE SOUND
Triangle I
Scott Islands
C Scott
Goletas Channel
QUEEN CHARLOTTE STR
BROUGHTON STRAIT
JOHNSTONE STRAIT
Hand I
Quatsino Sound
Solander I
Brooks Pen
Kyuquot Sound
Esperanza Inlet
VANCOUVER ISLAND
Campbell River
STRAIT
Comox
Sector
Secteur 1
CHANNEL
VOIE 74
Nootka Sound
Hesquiat Hr
Clayoquot Sound
Lennard I
Port Alberni
ALBERNI INLET
NANAIMO
GEORGIA
VANCOUVER
FRASER RIVER
CANADA
UNITED STATES/
ETATS - UNIS
ZONE BOUNDARY
LIMITE DE LA ZONE
Amphitrite Pt
Barkley Sound
Pachena Pt
Nitinat Lake
Carmanah Pt
Swiftsure Bank
La Perouse Bank
Port San Juan
VICTORIA
Esquimalt Hr
JUAN DE FUCA STRAIT
Sooke Hr
Whidbey I
Flattery
Umatilla Rf
Port Angeles
Ediz Hook
Puget Sound
SEATTLE
TOFINO
VESSEL
TRAFFIC
SERVICES
ZONE
LA ZONE DES
SERVICES DU
TRAFIC
MARITIME
DE TOFINO

ANNEX 5

SAILING DIRECTIONS

BRITISH COLUMBIA COAST

(SOUTH PORTION)

11 **Fishing vessels.** — From April 15 to October 31 large numbers of fishing vessels may be encountered inside the 100 m (328 ft) line on La Pérouse Bank in the approach to Juan de Fuca Strait. These vessels may be trolling, towing nets, or, particularly at night, may be at anchor. Because of the prevalence of fog and low visibility in this vicinity vessels approaching the area from any direction are advised to pass to the south and clear of the bank. Mariners obliged to cross the bank should navigate with extreme caution in order to avoid risk of collision with fishing vessels. For further details *see* Chapter I, Part A and the Annual Edition of Canadian Notices to Mariners.

ANNEX 5a

1988 Annual Edition

NOTICES TO MARINERS 1 to 43

8 INFORMATION CONCERNING FISHING VESSELS ON THE EAST AND WEST COASTS OF CANADA

General

1 Because of the large numbers and concentration of fishing vessels and the difficulties in sighting the nets, vessels are requested to navigate with caution when these operations are in progress

WEST COAST

2 **Georgia Strait — Fraser River**

Large numbers of fishing vessels using gill nets may be encountered day and night in the Fraser River and its approaches from approximately July 1 to November 1, and on other sporadic occasions throughout the year

Gill nets are up to 365 fathoms in length Mariners are requested to navigate with caution in this area

3 **Approaches to Juan de Fuca Strait — La Pérouse Bank — Swiftsure Bank — Estevan Point**

Mariners are warned that during the period from approximately April 15, to approximately September 30, large numbers of fishing vessels may be encountered inside the fifty fathom line off Estevan Point, La Pérouse and Swiftsure Banks in the approaches to Juan de Fuca Strait These vessels may be trolling, towing nets, or particularly at night, may be at anchor Because of the prevalence of fog and low visibility in this vicinity, vessels approaching these areas from any direction are advised to pass to seaward and clear of the banks Vessels which are obliged to cross the banks should navigate with extreme caution in order to avoid risk of collision with fishing vessels Radar derived information on the locations of large concentrations of fishing vessels may be received on request from *Tofino Traffic*.

4 **Juan de Fuca Strait**

Large numbers of fishing vessels using drift nets or purse seine nets may be encountered day and night in the Strait of Juan de Fuca from approximately July 1 to approximately November 1 Drift nets are about 150 fathoms in length and are attached at one end to the operating vessel The free end is marked by a white light

5 **West Coast of Vancouver Island**

Mariners are warned that from approximately June to November large fishing/factory ships may work off the West Coast of Vancouver Island at various distances between Cape Flattery and Estevan Point These ships may be fishing, working cargo or drifting

6 **Use of Radiotelephone**

Vessels to the seaward of Juan de Fuca Strait and within Canadian waters are required to maintain a continuous listening watch on the bridge to bridge VHF radiotelephone in accordance with the provisions of the *VHF Radiotelephone Practices and Procedures Regulations*

For exchange of information and assistance in making a safe passage, vessels can communicate with Fisheries Patrol Vessels or Vessel Traffic Services *(Tofino Traffic)* These Fisheries Patrol Vessels can be contacted on VHF radiotelephone channel 16 (156.8 MHz).

The Vessel Traffic Services (VTS) for the coastal waters of southern British Columbia designates VHF channels for specific sectors Refer to Notice to Mariners No 25 for details

Mariners are recommended to refer to the appropriate US sources for radiotelephone procedures for US waters

ANNEX 5b

DATE: 14 SEPTEMBER 1988

VICTORIA DISTRICT

Notship W-1098 - APPROACHES TO JUAN DE FUCA STRAIT - JUAN DE FUCA STRAIT - LA PEROUSE BANK - SWIFTSURE BANK - ESTEVAN POINT - FISHING

Mariners are warned that during the period from approximately 01 July 1988 to 30 September 1988, large numbers of fishing vessels may be encountered inside the 50 fathom line off Estevan, La Perouse and Swiftsure Banks and the approaches to Juan de Fuca Strait. These vessels may be trolling, towing nets, or particularly at night, may be at anchor. Because of the prevalence of fog and low visibility in this vicinity, vessels approaching these areas from any direction are advised to pass to seaward and clear of the banks. Vessels which are obliged to cross the banks should navigate with extreme caution in order to avoid risk of collision with fishing vessels. Tofino Traffic Centre pm VHF CHL 74 may be contacted for assistance in avoiding concentrations of fishing vessels.

ANNEX 6

REGULATIONS FOR THE PREVENTION OF COLLISIONS

Short Title

1. These Regulations may be cited as the *Collision Regulations*.

INTERNATIONAL REGULATIONS FOR PREVENTING COLLISIONS AT SEA, 1972 WITH CANADIAN MODIFICATIONS

PART A—GENERAL

RULE 1

Application—International

(*a*) These Rules shall apply to all vessels upon the high seas and in all waters connected therewith navigable by seagoing vessels.

RULE 2

Responsibility

(*a*) Nothing in these Rules shall exonerate any vessel, or the owner, master or crew thereof, from the consequences of any neglect to comply with these Rules or of the neglect of any precaution which may be required by the ordinary practice of seamen, or by the special circumstances of the case.

PART B—STEERING AND SAILING RULES

SECTION I—CONDUCT OF VESSELS IN ANY CONDITION OF VISIBILITY

RULE 4

Application

Rules in this Section apply in any condition of visibility.

RULE 5

Look-out

Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision.

RULE 6

Safe Speed—International

Every vessel shall at all times proceed at a safe speed so that she can take proper and effective action to avoid collision and be stopped within a distance appropriate to the prevailing circumstances and conditions.

In determining a safe speed the following factors shall be among those taken into account:

(*a*) By all vessels:

(i) the state of visibility,

(ii) the traffic density including concentrations of fishing vessels or any other vessels,

APPENDICE 6

RÈGLEMENT POUR PRÉVENIR LES ABORDAGES

Titre abrégé

1. Le présent règlement peut être cité sous le titre: *Règlement sur les abordages*.

RÈGLEMENT INTERNATIONAL DE 1972 POUR PRÉVENIR LES ABORDAGES EN MER, AVEC MODIFICATIONS CANADIENNES

PARTIE A—GÉNÉRALITÉS

RÈGLE 1

Application—International

a) Les présentes règles s'appliquent à tous les navires en haute mer et dans toutes les eaux attenantes accessibles aux navires de mer.

RÈGLE 2

Responsabilité

a) Aucune disposition des présentes règles ne saurait exonérer soit un navire, soit son propriétaire, son capitaine ou son équipage des conséquences d'une négligence quelconque quant à l'application des présentes règles ou quant à toute précaution que commandent l'expérience ordinaire du marin ou les circonstances particulières dans lesquelles se trouve le navire.

PARTIE B—RÈGLES DE BARRE ET DE ROUTE

SECTION I—CONDUITE DES NAVIRES DANS TOUTES LES CONDITIONS DE VISIBILITÉ

RÈGLE 4

Champ d'application

Les règles de la présente section s'appliquent dans toutes les conditions de visibilité.

RÈGLE 5

Veille

Tout navire doit en permanence assurer une veille visuelle et auditive appropriée, en utilisant également tous les moyens disponibles qui sont adaptés aux circonstances et conditions existantes, de manière à permettre une pleine appréciation de la situation et du risque d'abordage.

RÈGLE 6

Vitesse de sécurité—International

Tout navire doit maintenir en permanence une vitesse de sécurité telle qu'il puisse prendre des mesures appropriées et efficaces pour éviter un abordage et pour s'arrêter sur une distance adaptée aux circonstances et conditions existantes.

Les facteurs suivants doivent notamment être pris en considération pour déterminer la vitesse de sécurité:

a) Par tous les navires:

(i) la visibilité;

(ii) la densité du trafic et notamment les concentrations de navires de pêche ou de tous autres navires;

(iii) the manoeuvrability of the vessel with special reference to stopping distance and turning ability in the prevailing conditions,

(iv) at night the presence of background light such as from shore lights or from back scatter of her own lights,

(v) the state of wind, sea and current, and the proximity of navigational hazards,

(vi) the draught in relation to the available depth of water.

(*b*) Additionally, by vessels with operational radar:

(i) the characteristics, efficiency and limitations of the radar equipment,

(ii) any constraints imposed by the radar range scale in use,

(iii) the effect on radar detection of the sea state, weather and other sources of interference,

(iv) the possibility that small vessels, ice and other floating objects may not be detected by radar at an adequate range,

(v) the number, location and movement of vessels detected by radar,

(vi) the more exact assessment of the visibility that may be possible when radar is used to determine the range of vessels or other objects in the vicinity.

RULE 7

Risk of Collision

(*a*) Every vessel shall use all available means appropriate to the prevailing circumstances and conditions to determine if risk of collision exists. If there is any doubt such risk shall be deemed to exist.

(*b*) Proper use shall be made of radar equipment if fitted and operational, including long-range scanning to obtain early warning of risk of collision and radar plotting or equivalent systematic observation of detected objects.

(*c*) Assumptions shall not be made on the basis of scanty information, especially scanty radar information.

(*d*) In determining if risk of collision exists the following considerations shall be among those taken into account.

(i) such risk shall be deemed to exist if the compass bearing of an approaching vessel does not appreciably change,

(ii) such risk may sometimes exist even when an appreciable bearing change is evident, particularly when approaching a very large vessel or a tow or when approaching a vessel at close range.

RULE 8

Action to avoid Collision

(*a*) Any action taken to avoid collision shall, if the circumstances of the case admit, be positive, made in ample time and with due regard to the observance of good seamanship.

(*b*) Any alteration of course and/or speed to avoid collision shall, if the circumstances of the case admit, be large enough to be readily apparent to another vessel observing

(iii) la capacité de manœuvre du navire et plus particulièrement sa distance d'arrêt et ses qualités de giration dans les conditions existantes;

(iv) de nuit, la présence d'un arrière-plan lumineux tel que celui créé par des feux côtiers ou une diffusion de la lumière des propres feux du navire;

(v) l'état du vent, de la mer et des courants et la proximité de risques pour la navigation;

(vi) le tirant d'eau en fonction de la profondeur d'eau disponible.

b) De plus, par les navires qui utilisent un radar:

(i) les caractéristiques, l'efficacité et les limites d'utilisation de l'équipement radar;

(ii) les limitations qui résultent de l'échelle de portée utilisée sur le radar;

(iii) l'effet de l'état de la mer, des conditions météorologiques et d'autres sources de brouillage sur la détection au radar;

(iv) le fait que les petits bâtiments, les glaces et d'autres objets flottants peuvent ne pas être décelés par le radar à une distance suffisante;

(v) le nombre, la position et le mouvement des navires détectés par le radar;

(vi) le fait qu'il est possible d'apprécier plus exactement la visibilité lorsque le radar est utilisé pour déterminer la distance des navires et des autres objets situés dans les parages.

RÈGLE 7

Risque d'abordage

a) Tout navire doit utiliser tous les moyens disponibles qui sont adaptés aux circonstances et conditions existantes pour déterminer s'il existe un risque d'abordage. S'il y a doute quant au risque d'abordage, on doit considérer que ce risque existe.

b) S'il y a à bord un équipement radar en état de marche, on doit l'utiliser de façon appropriée en recourant, en particulier, au balayage à longue portée afin de déceler à l'avance un risque d'abordage, ainsi qu'au «plotting» radar ou à toute autre observation systématique équivalente des objets détectés.

c) On doit éviter de tirer des conclusions de renseignements insuffisants, notamment de renseignements radar insuffisants.

d) L'évaluation d'un risque d'abordage doit notamment tenir compte des considérations suivantes:

(i) il y a risque d'abordage si le relèvement au compas d'un navire qui s'approche ne change pas de manière appréciable;

(ii) un tel risque peut parfois exister même si l'on observe une variation appréciable du relèvement, particulièrement lorsque l'on s'approche d'un très grand navire, d'un train de remorque ou d'un navire qui est à courte distance.

RÈGLE 8

Manœuvre pour éviter les abordages

a) Toute manœuvre entreprise pour éviter un abordage doit, si les circonstances le permettent, être exécutée franchement, largement à temps et conformément aux bons usages maritimes.

b) Tout changement de cap ou de vitesse, ou des deux à la fois, visant à éviter un abordage doit, si les circonstances le permettent, être assez important pour être immédiate-

visually or by radar, a succession of small alterations of course and/or speed should be avoided.

(c) If there is sufficient sea room, alteration of course alone may be the most effective action to avoid a close-quarters situation provided that it is made in good time, is substantial and does not result in another close-quarters situation.

(d) Action taken to avoid collision with another vessel shall be such as to result in passing at a safe distance. The effectiveness of the action shall be carefully checked until the other vessel is finally past and clear.

(e) If necessary to avoid collision or allow more time to assess the situation, a vessel shall slacken her speed or take all way off by stopping or reversing her means of propulsion.

SECTION III - CONDUCT OF VESSELS IN RESTRICTED VISIBILITY

RULE 19

Conduct of Vessels in Restricted Visibility

(a) This Rule applies to vessels not in sight of one another when navigating in or near an area of restricted visibility.

(b) Every vessel shall proceed at a safe speed adapted to the prevailing circumstances and conditions of restricted visibility. A power-driven vessel shall have her engines ready for immediate manœuvre.

(c) Every vessel shall have due regard to the prevailing circumstances and conditions of restricted visibility when complying with the Rules of Section I of this Part.

(d) A vessel which detects by radar alone the presence of another vessel shall determine if a close-quarters situation is developing and/or risk of collision exists. If so, she shall take avoiding action in ample time, provided that when such action consists of an alteration of course, so far as possible the following shall be avoided:

(i) an alteration of course to port for a vessel forward of the beam, other than for a vessel being overtaken;

(ii) an alteration of course towards a vessel abeam or abaft the beam.

(e) Except where it has been determined that a risk of collision does not exist, every vessel which hears apparently forward of her beam the fog signal of another vessel, or which cannot avoid a close-quarters situation with another vessel forward of her beam, shall reduce her speed to the minimum at which she can be kept on her course. She shall if necessary take all her way off and in any event navigate with extreme caution until danger of collision is over.

ment perçu par tout navire qui l'observe visuellement ou au radar; une succession de changements peu importants de cap ou de vitesse, ou des deux à la fois, est à éviter.

c) Si le navire a suffisamment de place, le changement de cap à lui seul peut être la manœuvre la plus efficace pour éviter de se trouver en situation très rapprochée à condition que cette manœuvre soit faite largement à temps, qu'elle soit franche et qu'elle n'aboutisse pas à une autre situation très rapprochée.

d) Les manœuvres effectuées pour éviter l'abordage avec un autre navire doivent être telles qu'elles permettent de passer à une distance suffisante. L'efficacité des manœuvres doit être attentivement contrôlée jusqu'à ce que l'autre navire soit définitivement paré et clair.

e) Si cela est nécessaire pour éviter un abordage ou pour laisser plus de temps pour apprécier la situation, un navire doit réduire sa vitesse ou casser son erre en arrêtant son appareil propulsif ou en battant en arrière au moyen de cet appareil.

SECTION III — CONDUITE DES NAVIRES PAR VISIBILITÉ RÉDUITE

REGLE 19

Conduite des navires par visibilité réduite

a) La présente règle s'applique aux navires qui ne sont pas en vue les uns des autres et qui naviguent à l'intérieur ou à proximité de zones de visibilité réduite.

b) Tout navire doit naviguer à une vitesse de sécurité adaptée aux circonstances existantes et aux conditions de visibilité réduite. Les navires à propulsion mécanique doivent tenir leurs machines prêtes à manœuvrer immédiatement.

c) Tout navire, lorsqu'il applique les règles de la section I de la présente partie, doit tenir dûment compte des circonstances existantes et des conditions de visibilité réduite.

d) Un navire qui détecte au radar seulement la présence d'un autre navire doit déterminer si une situation très rapprochée est en train de se créer et/ou si un risque d'abordage existe. Dans ce cas, il doit prendre largement à temps des mesures pour éviter cette situation, toutefois, si ces mesures consistent en un changement de cap, il convient d'éviter, dans la mesure du possible, les manœuvres suivantes:

(i) un changement de cap sur bâbord dans le cas d'un navire qui se trouve sur l'avant du travers, sauf si ce navire est en train d'être rattrapé;

(ii) un changement de cap en direction d'un navire qui vient par le travers ou sur l'arrière du travers.

e) Sauf lorsqu'il a été établi qu'il n'existe pas de risque d'abordage, tout navire qui entend, dans une direction qui lui paraît être sur l'avant du travers, le signal de brume d'un autre navire, ou qui ne peut éviter une situation très rapprochée avec un autre navire situé sur l'avant du travers, doit réduire sa vitesse au minimum nécessaire pour maintenir son cap. Il doit, si nécessaire, casser son erre et, en toutes circonstances, naviguer avec une extrême précaution jusqu'à ce que le risque d'abordage soit passé.

RULE 35

Sound Signals in Restricted Visibility—International

In or near an area of restricted visibility, whether by day or night, the signals prescribed in this Rule shall be used as follows:

(*a*) A power-driven vessel making way through the water shall sound at intervals of not more than 2 minutes one prolonged blast.

RÈGLE 35

Signaux sonores par visibilité réduite—International

Tant de jour que de nuit, à l'intérieur ou à proximité d'une zone où la visibilité est réduite, les signaux prescrits par la présente règle doivent être utilisés comme suit:

a) Un navire à propulsion mécanique ayant de l'erre doit faire entendre un son prolongé à des intervalles ne dépassant pas 2 minutes.

ANNEX 7

- RECOMMENDED -

CODE OF NAUTICAL PROCEDURES AND PRACTICES

FOREWORD

The International Conference on Training and Certification of Seafarers, 1978 adopted the *International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978* on the 7th of July 1978.

RECOMMENDED CODE OF NAUTICAL PROCEDURES AND PRACTICES TO BE FOLLOWED BY PERSONS ON BOARD SHIPS IN ORDER TO ENSURE SAFETY AND POLLUTION PREVENTION

PART I

BASIC PRINCIPLES TO BE OBSERVED IN KEEPING A NAVIGATIONAL WATCH

1. Parties shall direct the attention of shipowners, ship operators, masters and watchkeeping personnel to the following principles which shall be observed to ensure that a safe navigational watch is maintained at all times.
2. The master of every ship is bound to ensure that watchkeeping arrangements are adequate for maintaining a safe navigational watch. Under the master's general direction, the officers of the watch are responsible for navigating the ship safely during their periods of duty when they will be particularly concerned with avoiding collision and stranding.
3. The basic principles, including but not limited to the following, shall be taken into account on all ships.

4. **Watch arrangements**

   (a) The composition of the watch shall at all times be adequate and appropriate to the prevailing circumstances and conditions and shall take into account the need for maintaining a proper look-out.

   (b) When deciding the composition of the watch on the bridge which may include appropriate deck ratings, the following factors, *inter alia*, shall be taken into account:

      (i) at no time shall the bridge be left unattended;

      (ii) weather conditions, visibility and whether there is daylight or darkness;

      (iii) proximity of navigational hazards which may make it necessary for the officer in charge of the watch to carry out additional navigational duties;

      (iv) use and operational condition of navigational aids such as radar or electronic position-indicating devices and any other equipment affecting the safe navigation of the ship;

      (v) whether the ship is fitted with automatic steering;

      (vi) any unusual demands on the navigational watch that may arise as a result of special operational circumstances.

7. **Navigational equipment**

   (a) The officer of the watch shall make the most effective use of all navigational equipment at his disposal.

   (b) When using radar, the officer of the watch shall bear in mind the necessity to comply at all times with the provisions on the use of radar contained in the applicable regulations for preventing collisions at sea.

   (c) In cases of need the officer of the watch shall not hesitate to use the helm, engines and sound signalling apparatus.

9. **Look-out**

   In addition to maintaining a proper look-out for the purpose of fully appraising the situation and the risk of collision, stranding and other dangers to navigation, the duties of the look-out shall include the detection of ships or aircraft in distress, shipwrecked persons, wrecks and debris. In maintaining a look-out the following shall be observed:

   (a) the look-out must be able to give full attention to the keeping of a proper look-out and no other duties shall be undertaken or assigned which could interfere with that task;

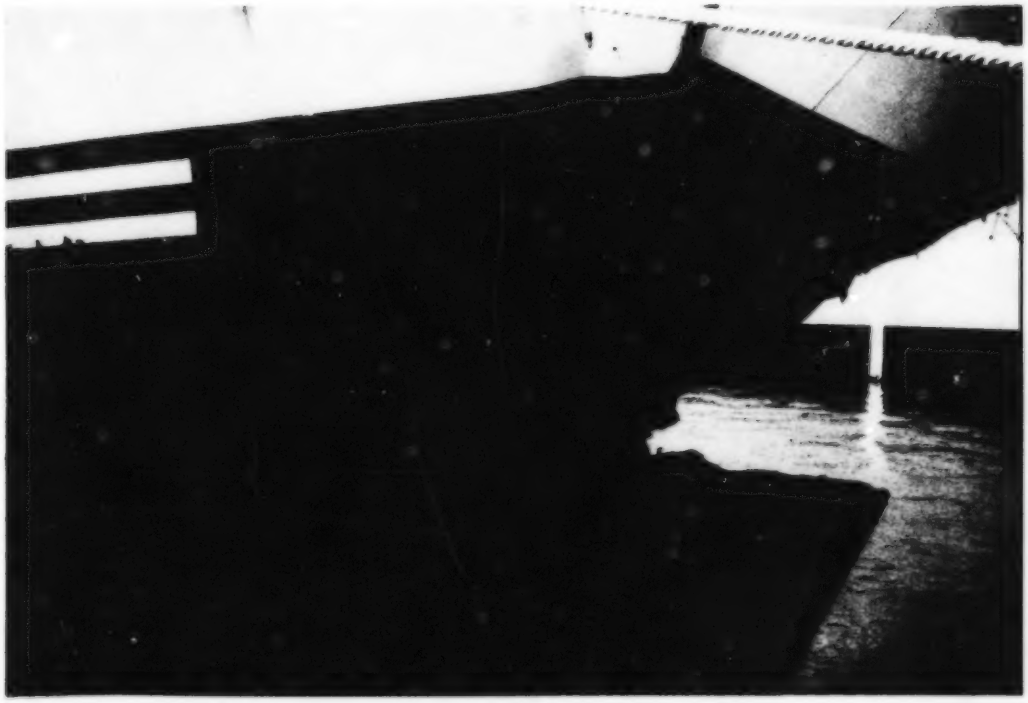
(b) the duties of the look-out and helmsman are separate and the helmsman shall not be considered to be the look-out while steering, except in small ships where an unobstructed all-round view is provided at the steering position and there is no impairment of night vision or other impediment to the keeping of a proper look-out. The officer in charge of the watch may be the sole look-out in daylight provided that on each such occasion:

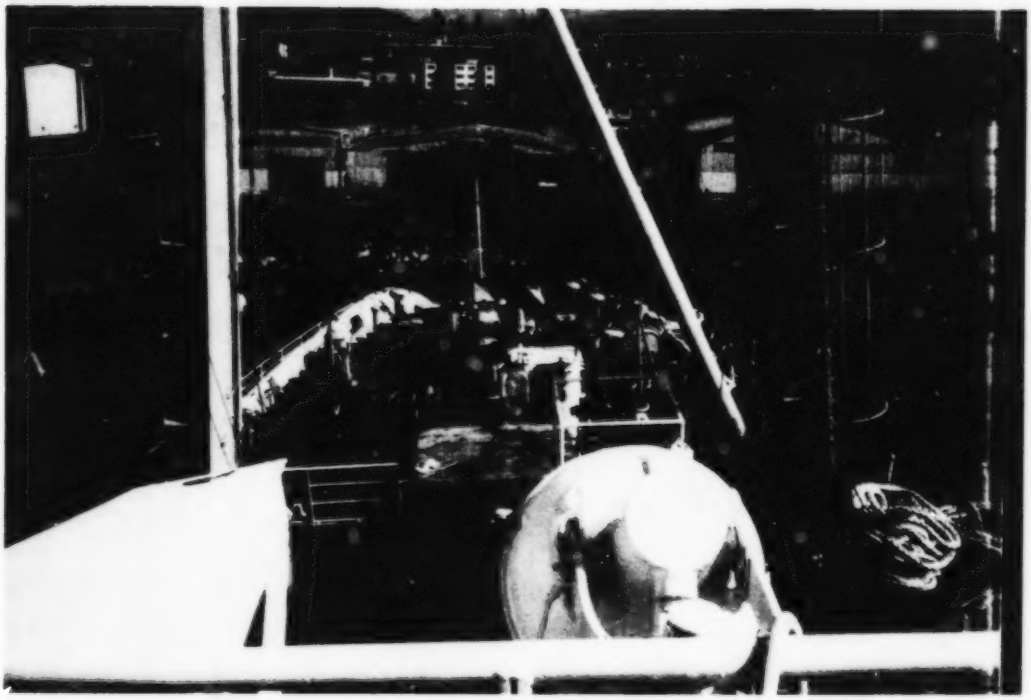
(i) the situation has been carefully assessed and it has been established without doubt that it is safe to do so;

(ii) full account has been taken of all relevant factors including, but not limited to:
- state of weather
- visibility
- traffic density
- proximity of danger to navigation
- the attention necessary when navigating in or near traffic separation schemes;

(iii) assistance is immediately available to be summoned to the bridge when any change in the situation so requires.

"IRTYSHSK"





"IRTYSHSK"

"OCEAN FAME"

"OCEAN FAME"